Global support is a bear for customers and vendors. Global Innovators Series follows page 36

$600 billion? Ha! The ,Pat ... will cost a lot mor... Strassmann writes Manage...

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Staten Island University Hospital CIO Rick Carney wanted "to rip everything up and start from scratch"

Risk-taker leads radical IS update

By Thomas Hoffman
STATEN ISLAND, N.Y.

WHEN RICK CARNEY left his job as vice president of IS at Swiss engineering giant ABB Asea Brown Boveri to become the chief information officer at a small community hospital in early 1995, his friends thought he was nuts.

For starters, the health care industry has historically been a high-tech laggard. On top of that, hospitals are under tremendous cost constraints, thanks to penny-pinching health maintenance organizations. That trend has forced many hospitals in the New York area to go bankrupt or merge with others to survive.

But Carney, 33, has never been afraid to buck conventional wisdom or stare down a challenge. "I saw an opportunity to rip everything up and start from scratch," said Carney, a street-smart New Jerseyite who has done just that in his first 27

Risk-taker, page 17

Hardware headroom

▸ *New apps push capacity planning to forefront*

By Jaikumar Vijayan and Tim Ouellette

A SLEW OF fast-growing business applications — especially for electronic commerce, intranets and data warehousing — are blowing the lids off the servers that run them.

The surging application demands could mire users in endless rounds of upgrades, platform migrations and uncomfortable explanations to their managers.

At issue: Figuring out just how much hardware to buy and how much headroom is needed for growth — without overspending systems budgets or getting stuck with too much idle capacity.

"If you underscope your requirement, you hit the wall. Then you are out of service ... and a job," said James Garden, an analyst at Technology Busi-

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PURE AS THE DRIVEN JAVA
Sun extends 100% Pure Java to broaden market. Page 12

Quality crisis haunts laptops

▸ *Flood of new chips and poor testing blamed*

By Mindy Blodgett

IT'S ALWAYS SOMETHING in the laptop market.

Last year, it was a severe shortage of product. Today, users are plagued by quality problems that industry observers said are the worst ever. And if Gartner Group, Inc. is right, the situation probably won't improve until Intel Corp. slows down the introduction of faster processors.

"We believe the notebook industry is in a crisis, and that is not too strong a thing to say," said Leslie Fiering, a Gartner analyst and author of a "problem watch" report on the subject.

In some cases, problems are

Quality crisis, page 16

Computer detectives uncover smoking guns

▸ *Cybersleuths glean evidence from backup tapes*

By Kim S. Nash

A SPOT-CHECK of employee electronic mail revealed this alarming message: "I'll lose my job if they find out what I sent you."

Had company secrets been transmitted over the Internet? To find out, anxious officials at the West Coast company called Computer Forensics, Inc., a Seattle firm that combs through hardware and software for evidence that some people expect to be hidden or erased.

Enter Joan Feldman, the 44-year-old president of the cybersleuth firm, rolling her hard-sided Samsonite suitcase. It's packed with portable hard drives and proprietary software tools that help her pry open computer files and backup tapes.

As it turns out, the E-mailer hadn't revealed corporate goodies. But he had sent pornography, allegedly to a minor in a chat room.

"The good news was the guy wasn't a thief. The bad news was he was a potential pedophile," Feldman said.

Feldman and her team of former Secret Service agents, retired military investigators and hard-core geeks root around a company's information systems and look for evidence. The field is called computer forensics.

Sometimes a company hires forensics experts, but more often they are hired by opposing attorneys seeking the "smoking

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UP FRONT

New legacy

Is your data warehouse your next legacy system?

Ridiculous, you say. Data warehousing is just getting started. We can't possibly worry about such things.

But maybe you should. When you think about it, data warehouses have a lot in common with other legacy systems — mainframes, minicomputers, office automation systems, PCs and LANs — that you already support in your organization.

All moved in quickly, driven by insatiable demand from users for immediate business benefits. Like their legacy predecessors, data warehouses look like they will rapidly become part of the corporate IT fabric before anyone has given much thought to integration or architecture. And once a legacy system establishes itself, it becomes a platform with which future technologies must be integrated.

Software vendors would rather you *not* give this issue much attention. After all, they're busy selling products. But a lot of the warehouse products being offered aren't based on something else. Many of the vendors are small, one-product companies. And even some of the major database vendors have acquired their way into this market in a rush to get a foothold. They'll worry about integration later.

Data warehouses are only going to get bigger.

I'm not trying to throw water on the warehousing phenomenon. This is probably the hottest non-Internet concept to hit the IS world in three years. Business users love their warehouses because they change their view of the business. IT folks get a rush out of contributing to the bottom line, and vendors are obliging with more products than you can shake a schema at.

But warehouses are only going to get bigger and more pervasive. They require data administration, dedicated hardware, new software licenses and interfaces to existing systems. You may find that your future system choices are limited by their compatibility with installed warehouse software.

So think about protecting your investment. And make sure your warehouse vendors are in this for the long run. Because you probably already are.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE
BY RICH TENNANT

E-mail Rich Tennant at the wave@tiac.net

Slacking on tracking

▸ Survey: One-third of companies don't keep inventory on software

By April Jacobs

DESPITE THE FACT that keeping track of software can save companies as much as 33% of their software bill and time in supporting users, one in three companies doesn't do anything, according to a recent study.

The study, which defined tracking as determining the number, size and location of applications, was conducted by Meta Group, Inc. in Stamford Conn. The research firm surveyed 873 Fortune 1,000 companies. Most said they had information technology staffs of more than 100 people and budgets in excess of $50 million.

According to the study, half the companies had no data on how their software had changed in the past year, in terms of upgrades, deletions or new packages.

"Tracking software is like doing an archeological dig for most of these companies," said Howard Rubin, author of the report and a professor of computer science at Hunter College in New York.

EASY STREET

But companies that have made the leap say they expect to make life easier for their support staff, their end users and their wallets.

At publishing giant Random House, Inc. in New York, a software and network management project is under way using IBM's Tivoli management tools to get desktop costs and support issues under better control, as well as smooth the budget process, said Michael DeMasi, director of networking and computer operations.

"We'll not only be able to track what's out there in terms of software, but distribute new software as well. We're really hoping this will fill in a lot of the holes we've had in terms of knowing what people have on their desktops and being able to provide the best support for that," he said.

"Managing all of it was very complex, and there is no need for it to be that complex," DeMasi said.

Rubin says companies can take the following steps to help themselves:

- Make a list of key applications to be managed.
- Track incoming inventory.
- Do the dig: start a database.
- Set up an asset management program.

Gartner Group, Inc., also in Stamford, has extolled the virtues of asset management. In a recent study, Gartner analysts said measures such as standardizing and managing hardware and software more efficiently can save companies as much as 25% of their total IT bill. About two-thirds of a desktop's cost over its three-year life can be attributed to support-related issues, according to another Gartner cost-of-ownership study.

Users suggest that companies that want to implement a tracking program look at their inhouse and packaged applications and then set up a database to begin an inventory of existing and new applications.

RAPID CHANGE

Most companies have a hard time tracking their software assets — from desktop to mainframe — because of the number of applications on hand and how quickly they change. On average, one-sixth of the applications change each year.

That can create legal and financial problems, Rubin said, because some companies can get caught with too few licenses for users, or may be buying as much as one-third more software than they need.

"It's a cost issue, it's a legal issue, and it's a support issue," said a purchasing manager at a major New York-based television network, who requested anonymity.

For example, the manager said, when you run fewer versions of an application, you have fewer compatibility issues, can avoid help desk calls and can manage applications more simply.

According to a recent study:

33% of those surveyed have no data on their inventory of software applications

38% of those surveyed have no data on the growth rate of their portfolio of software applications

Base: 873 companies

Source: Meta Group, Inc., Stamford, Conn.

His company began purchasing its software about two years ago from Stream International, Inc. in Canton, Mass. Stream tracks all its licenses and current packages. "We don't want some people working with Word 2.0 trying to talk to someone with Word 6.0. We've all experienced that same nightmare," he said.

Prudential Company of America in Roseland, N.J., in 1995 started a comprehensive asset management program to consolidate its purchasing and standardize its hardware and software for more than 60,000 desktops, said Russ Pipitone, vice president of purchasing. The company's goal was to reduce cost of ownership.

The company hired a consultant to get a baseline on its holdings and help develop requests for proposals, as well as negotiate contracts. The first step, Pipitone said, was figuring out what was already in place.

Prudential found it had so many legacy and desktop applications, it hired IBM Global Services in Somers, N.Y., to manage its legacy systems so it could focus on desktop issues. □

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Solaris gets Java jolt

By Jaikumar Vijayan

IT'S JAVA TIME for Solaris.

Users of Sun Microsystems, Inc.'s Solaris will get a taste of native Java this week when the company announces Solaris a.6, the latest edition of its Unix operating system.

Among the highlights are the following:

- A Java Virtual Machine that lets users develop Java applications on Solaris.
- An integrated HotJava browser for exploring the Internet.
- Web Start, a browser-based utility that guides users through selection and installation of both Solaris and packaged applications.

Users looking for full 64-bit functionality will have to wait until early next year to get it. But the latest version of the operating system does support large file sizes of up to 1T byte. Support for large files is a core component of 64-bit functionality. The current limit is 2M bytes.

"The capabilities certainly are interesting," said Rex Hays, a design engineer in the advanced development product group at Eastman Kodak Co. in Rochester, N.Y.

"We will definitely be looking at opportunities to exploit some of these new features," Hays said.

"The story with Solaris a.6 is increased 64-bit capabilities, an integrated Web server and increased support for clustering and high availability," said Jean Bozman, an analyst at International Data Corp. in Mountain View, Calif.

Sun's Solaris makeover, which comes about 18 months after the last major upgrade, gives it some of the same capabilities as Unix versions from Hewlett-Packard Co. and IBM, analysts said. But it doesn't break much new ground in terms of 64-bit capabilities or high-availability capabilities, they said.

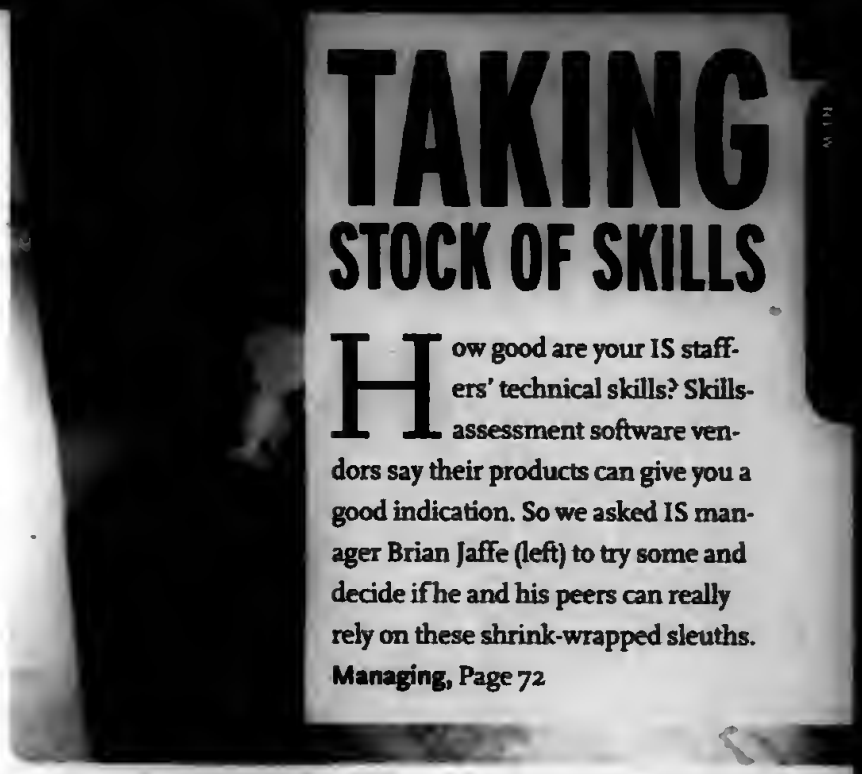
"In some places, they are filling the gaps, in other places, they are catching up, and with some features, they are cutting-edge," said Tony Iams, an analyst at D. H. Brown and Associates in Port Chester, N.Y.

For example, Sun is the last among the major Unix vendors to announce support for large file sizes. And it is likely to be last in the race to deliver full 64-bit functionality, analysts said.

Unix rivals HP and IBM already support large file sizes, and both claim they will deliver full 64-bit functionality by year's end. Digital Equipment Corp. and Silicon Graphics, Inc. already deliver 64-bit functionality. □

A SAMPLING OF WHAT'S NEW IN SOLARIS 2.6

Feature	Function
Java Virtual Machine	• Integrates Java with Solaris; includes Java runtime environment and tools for Java applets and applications
WebNFS Software	• Allows file access through the Web
Common Desktop Environment	• Provides consistent look and feel across Unix



TAKING STOCK OF SKILLS

How good are your IS staffers' technical skills? Skills-assessment software vendors say their products can give you a good indication. So we asked IS manager Brian Jaffe (left) to try some and decide if he and his peers can really rely on these shrink-wrapped sleuths.

Managing, Page 72

Sun loses first battle in Java standard quest

▶ *Key issue: Who will control changes to platform?*

By Sharon Gaudin

SUN MICROSYSTEMS, INC. lost the first battle last week in its effort to turn the Java programming language into an official industry standard.

That setback has some users worried that if Sun is denied the role of "recognized submitter" for Java standards, the language could be lost in a proprietary tangle.

A U.S. standards committee — just one of many international committees that will be weighing the issue — voted to deny Sun's request to act as a standards body for its own Java programming language and software platform. Granting the request would have enabled Sun alone to receive or reject submissions from other computer vendors to change or update the technology, before passing those revisions on to the International Standards Organization (ISO) and International Electrotechnical Commission (IEC) for final approval. The ISO and IEC are international standards bodies.

"If Sun's strategy with ISO is approved, you'd have the best of both worlds," said Larry Hagerty, a project manager at Tampa, Fla.-based GTE Data Services. "Sun would have some control, allowing it to move the technology along rapidly, without getting caught up in the red tape of a large committee."

The committee's vote came with a list of suggestions, and a spokeswoman for JavaSoft, a division of Sun, said Sun would be willing to consider making some changes.

Hagerty said he can see where Sun's industry competitors would cry foul at Sun's seeming leg up in the Java market. "But you also have to consider if this is any less control than Microsoft has since they turned over ActiveX to a standards body," he said. "Microsoft really still has control over that."

The vote by the U.S. committee, which includes representatives from AT&T Corp., Apple Computer, Inc., IBM and Hewlett-Packard Co., came as no surprise. But this isn't the final vote, because about a dozen other international committees will log in their votes next month.

"The issue becomes not so much whether Sun gets to control Java, but what happens next," said Judith Hurwitz, president of Hurwitz Group, Inc. in Newton, Mass. "Does it become a free-for-all, where nobody is really allowed to control it and therefore it becomes chaotic? Then the users lose, because that's closer to becoming proprietary." □

Amdahl strikes back with its big iron plan

By Tim Ouellette

AMDAHL CORP. hopes to steal some thunder from IBM's long-expected mainframe processor upgrade announcement this week.

Amdahl, a Sunnyvale, Calif., mainframe maker, will try to one-up IBM by outlining its own upgrade plans for the next three years. The plans include processors with more power than IBM can muster.

The move is meant to reassure Amdahl customers and let them plan for future upgrades — at a time when competitors IBM and Hitachi Data Systems Corp. have been taking market share from Amdahl.

"Amdahl is still six to nine months away from delivery on this, but they are trying to hold their place in the market," said John Young, director of enterprise systems planning at The Clipper Group, Inc., a Wellesley, Mass., consultancy.

Amdahl's new 700 series CMOS processors, due early next year, will run at 75 MIPS. IBM's G4 line, due this summer, will reach 60 to 65 MIPS, sources said [CW, May 26].

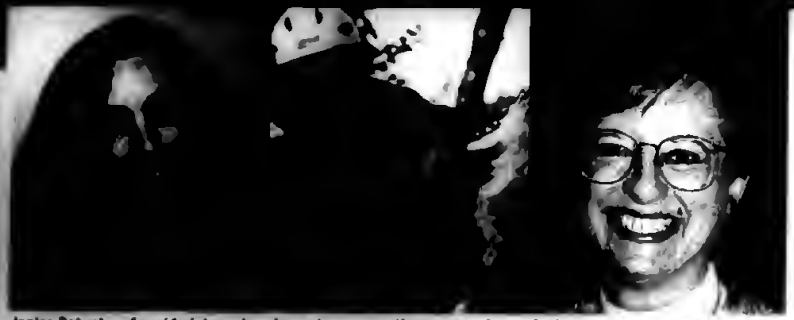
"If users don't need immediate capacity relief, they will get better capacity when the 700 series ships," Young said.

Amdahl officials said further improvements in 1999 and 2000 could produce a 150-MIPS system.

But IBM has one twist of its own this week for high-end data centers.

It will add hardware to its multiengine RY5 models that will cool down the air-cooled CMOS processors more than usual and speed their performance.

Previously, those high-end systems couldn't match the performance of older water-cooled mainframes, a situation that kept some users from moving to the more-efficient and less-expensive CMOS technology. □



Janice Roberts refused to let gender bias deter her Silicon Valley rise. Corporate Strategies, page 67

An eagle conservation program is a Computerworld Smithsonian Award finalist. In Depth, page 86

Project leader Janet Vask says focus on your goal, learn from mistakes. Corporate Strategies, page 67

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Customer service key to project approval

▶ *Manufacturers rely on client/server installs to meet retail needs*

By Randy Weston

WHY DO MANUFACTURERS go through the multimillion-dollar pain of installing enterprise client/server systems? To keep their retailing customers — such as the ever-demanding Wal-Mart — happy.

Several project managers and analysts said it is much easier to get senior management approval for big client/server migrations by highlighting the modules that can improve customer service. The rest of the enterprise resource planning (ERP) modules can then follow.

"Stick the tag line 'customer service' to any proposal, and it gets approved," said Vinnie Mirchandani, an analyst at Gartner Group, Inc. in Stamford, Conn.

Mirchandani said many manufacturers are reacting to demands from megaretailers — such as Wal-Mart Stores, Inc. and Kmart Corp. — for suppliers to cater to their unique needs. That, in turn, is forcing manufacturers to turn to client/server systems that improve delivery times and management of customer orders.

Paragon's Jim Skinner: Order-entry system will help the firm keep Wal-Mart as customer

For example, the systems will let companies tell a customer on the phone in seconds when an order can be filled, immediately alert plant managers of a new order or change an order.

"Companies that don't have this ability now [are] at risk of losing key accounts," warned Greg Girard, an analyst at Advanced Manufacturing Research, Inc. in Boston.

That was the concern of Paragon Trade Brands, Inc., a Norcross, Ga.-based maker of generic diapers.

The $600 million manufacturer decided to install Redwood Shores, Calif.-based Oracle Corp.'s application system designed specifically for the consumer packaged-goods industry.

The application package comprises modules from five vendors, including an order-entry management system from Industri-Matematik International, Inc. (IMI) in Tarrytown, N.Y.

Paragon officials hope the system will let them keep Wal-Mart's name stamped on their diapers.

Jim Skinner, vice president of logistics and distribution at Paragon, said it was the order-entry piece from IMI — and not the ERP pieces from Oracle and the other vendors — that sold his company on the package.

SURVIVAL TACTICS

"[Manufacturing] companies like ours that have traditionally been operations-driven have to become more market-driven to survive. And the only way to become market-driven is to do business like your customer demands," Skinner said.

Paragon is beginning the installation process and hasn't set a dollar savings target. But Skinner said the real value will be in keeping Wal-Mart as a customer, because Wal-Mart could choose any generic diaper to stamp its name on.

Even for a migration to SAP AG's R/3 system, users are looking at the order-entry and supply chain management pieces to justify the huge projects.

Nash Finch Co., a $4.5 billion Minneapolis-based wholesaler of grocery items, moved to R/3 specifically to improve management of the supply and demand chain sides of its business. It uses a hodgepodge of legacy mainframe and IBM AS/400 systems but is moving to R/3 to handle 2,200 customer stores.

Nash Finch has an on-time order fulfillment rate in the high 90% range. But Patti Gill, director of future systems, said, "As we grow, it was doubtful we would have been able to maintain that service level with our legacy systems." □

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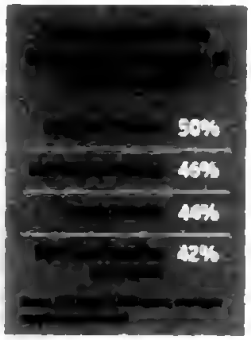
Intranets can be rife with hidden costs

By Bob Wallace

NETWORK PLANNERS with experience designing and building intranets are warning of hidden costs and key concerns associated with laying the LAN and WAN foundations needed to support these increasingly popular networks.

Users can expect to pay for higher-capacity networking hardware, extra WAN bandwidth, specialty intranet efficiency packages and outside help to get the projects going.

That warning is backed up by a survey from Infonetics Research, Inc. in San Jose, Calif., in which about half of the respondents said building intranets is the top reason for upgrading to high-speed LANs.



Source: Infonetics Research, Inc., San Jose, Calif.

LOCATION, LOCATION...

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"We had a group that wanted the server located in a specific area, which required us to buy some T1 [WAN] lines and routers to support that request," Olgum said. "We're looking at a one-time $10,000 to $11,000 charge and a $6,000 annual charge. Where you locate servers has a big impact on network topology and costs. And people don't think of network architecture when they plan intranet applications."

Harris also expects to buy proxy servers — another hidden cost — to conserve intranet bandwidth. Proxy servers collect Web page requests from end users and save capacity by retrieving the popular pages once and caching them locally for follow-up requests.

Users can expect to pay $10,000 to $15,000 for a workstation that can be used as a proxy server, said Tom Plaster, an analyst at Strategic Network Consulting, Inc. in Rockland, Mass. Sun Microsystems, Inc.'s SPARCstations are the most popular systems used as proxy servers, but regular servers can be configured to perform the same functions, he said.

Mercy Healthcare System of Southeastern Pennsylvania is in the middle of a sweeping network-wide 3Com Corp. equipment upgrade that will let its enterprise network support an intranet and medical imaging applications.

"We're deploying switched Ethernet to the desktop to replace shared Ethernet and are moving toward an [Asynchronous Transfer Mode] backbone for the network," said Mike Bannon, communications manager at Mercy Healthcare in Bala-Cynwyd, Pa. "We needed an infrastructure that could handle desktop and intranet applications."

Those types of upgrades typically cost between a few hundred thousand dollars up to more than $1 million when completed, analysts said.

Another hidden cost involves paying for outside help, such as consultants. "Lots of [information systems] staffs in health care are lean to say the least and need additional manpower and expertise for these projects," Bannon said.

Eastman Kodak Co. in Rochester, N.Y., plans a Cisco Systems Inc. LAN infrastructure upgrade to support an intranet that features multiple high-bandwidth applications based on video, multimedia and Java.

Network system engineer Trev Layton said special software/hardware combinations needed to apportion calls across multiple intranet servers will be a hidden cost for many.

"As demand for access to intranet applications increases, users will find it more difficult to get by with one server," Layton said. "When you go to multiple servers, you need packages that can spread out the calls so server utilization is even. That helps keep users happy, access-wise." Analysts said those packages cost from several thousand dollars to more than $15,000. □

Start-up aims to link Gigabit Ethernet, ATM

By Bob Wallace

Wake Forest's Ron Rimmer says neither technology is the definitive answer

THERE'S HELP in store for users who want to link Gigabit Ethernet switches to Asynchronous Transfer Mode (ATM) campus and wide-area networks.

Gigabit Ethernet switch maker Alteon Networks, Inc., a start-up in San Jose, Calif., is working on what could become an "industry first" a Gigabit Ethernet switching system that can feed traffic to ATM networks.

That runs counter to the common notion that the two technologies compete with each other. Information systems managers soon will have the flexibility to connect the technologies in their enterprise networks.

Although Ethernet technology rules in building LANs, ATM has been widely deployed to link buildings within campuses and connect those campuses to form WANs.

"There's a real need for products that bridge Gigabit Ethernet and ATM technologies," said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J. "The biggest benefit is that it enables Gigabit Ethernet switches to use ATM WAN services."

Users need a way to cross over from Gigabit Ethernet LANs to ATM WANs because carriers don't offer Gigabit Ethernet WAN services.

Users expressed interest in mixing ATM and Gigabit Ethernet technologies.

"I don't see either as the definitive technology answer for an entire enterprise," said Ron Rimmer, network manager at Wake Forest University in Winston-Salem, N.C. "Products like these will be beneficial to a large number of users because they enable you to go with familiar Ethernet technology in buildings and use ATM to connect them."

SEPARATE STRENGTHS

Gigabit Ethernet is gaining support as a superhigh-speed data scheme, while ATM has won acclaim for its ability to support voice, data and video.

Rimmer said he doesn't buy in to the one-or-the-other positioning of the two high-speed technologies. "Gigabit Ethernet will complement ATM in some ways," he said.

Alteon is working with NEC America, Inc. to build an add-on to its Gigabit Ethernet AceSwitch so it can connect to ATM networks. It will ship this year.

Alteon also has plans for a device that will link AceSwitches to 100M bit/sec. Fiber Distributed Data Interface networks, which are also widely deployed to form campus backbone systems. □

& Mortgage company's early frame-relay choice pays long-term dividends. Page 53

Few contingency plans reported

By Thomas Hoffman
CHICAGO

YOUR VENDORS say they are making their software year 2000-compliant, and you are determined to convert and test the dickens out of applications developed in-house.

But if any of your systems go wacky and don't perform as expected, does your company have a fallback plan?

YEAR 2000 COUNTDOWN

A chorus of "I don't know" and "I'm not involved" echoed eerily from most of the dozen or so disaster recovery coordinators interviewed by *Computerworld* at Conodisco, Inc.'s annual user conference here last week.

Given that the year 2000 date problem could cost businesses up to $1 trillion worldwide, according to the latest analyst estimates, disaster recovery coordinators are noticeably absent from fending off what could potentially become the world's single biggest business disaster.

"There's a lot of wishing and hoping" in the industry and not a lot of check-point testing and involvement by business continuity planners, said Allan J. Graham, a senior vice president at Conodisco. He is responsible for the Rosemont, Ill.-based vendor's year 2000 testing services.

For example, Graham said he is aware of 20 Conodisco customers trying to dodge the millennium bullet by converting their core legacy systems to a client/server package such as SAP America, Inc.'s R/3 software. Of that group only two are making contingency plans to run their legacy systems in parallel — in the event that the client/server applications aren't installed and tested in time, he said.

NOT FOOLPROOF

Yet migration to a third-party client/server package such as R/3 is far from a foolproof escape hatch, according to Capers Jones, chairman of Software Productivity Research, Inc. in Burlington, Mass.

Companies that haven't yet begun to migrate their legacy applications to client/server packages such as R/3 or PeopleSoft Inc. software probably won't make it in time.

That's because thousands of function points have to be converted and tested during the next 29 months, Jones said.

One exception is Carter-Wallace Co., a Cranbury, N.J., manufacturer of consumer health and beauty products.

The company chose William Deakin, its disaster recovery coordinator, to spearhead year 2000 work.

Senior management "recognized the experience I've had on both the mainframe and PC side [of disaster recovery], so they thought it was a natural fit," said Deakin, a 19-year veteran of disaster recovery. He is directing efforts to coordinate year 2000 testing with all electronic data interchange partners. He is also testing fax machines, copiers and other hardware with embedded chips that might be date-sensitive.

It also is important to begin early testing of so-called year 2000-compliant vendor software, because some analysts predict that up to 35% of such software might not actually work in 2000. "That scares the heck out of me, so we're doing as much testing in that area as possible," said Wayne S. Gardner, an information systems operations specialist at Drake Bakeries in Wayne, N.J. □

Intranets can be rife with hidden costs

By Bob Wallace

NETWORK PLANNERS with experience designing and building intranets are warning of hidden costs and key concerns associated with laying the LAN and WAN foundations needed to support these increasingly popular networks.

Users can expect to pay for higher-capacity networking hardware, extra WAN bandwidth, specialty intranet efficiency packages and outside help to get the projects going.

That warning is backed up by a survey from Infonetics Research, Inc. in San Jose, Calif., in which about half of the respondents said building intranets is the top reason for upgrading to high-speed LANs.

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Got them vacation E-mail blues?

▸ *Users offer up strategies to deflect the crush of unwanted mail*

By Sharon Machlis and Barb Cole-Gomolski

WHEN DAN BARTH, chief information officer at Pinnacle Brands, Inc., came back from his most recent vacation, he didn't have to face a mountain of unread E-mail.

Instead, he checked his messages while he was away.

Barth isn't alone. More and more information technology workers are taking their laptops on holiday to cope with what otherwise could be a staggering amount of electronic correspondence upon their return.

"I can have hundreds of messages waiting," said Dennis Murray, head of cooperative technologies for clinical development and regulatory affairs at Novartis Pharmaceuticals AG in East Hanover, N.J. "I just decided to dial in through my vacation."

Electronic-mail use is mushrooming. According to research firm Creative Networks, Inc. in Palo Alto, Calif., the average E-mail user sends 18 and receives 30 messages per day. An estimated 2.6 trillion messages will be generated by U.S.-based networks this year, up from 776 billion three years ago, according to the Electronic Messaging Association.

So the E-mail deluge is only going to get worse. Staying plugged in is one of the most extreme ways of managing E-mail that piles up during vacation time. Other suggested strategies include the following:

- Setting up an automated reply telling people you are away and suggesting an alternate address for issues that can't wait by using automatic reply generators found in many major mail packages.
- Automatically forwarding messages to someone else to deal with while you are gone.
- Setting up filters for your messages to screen out lists and other regular mail not likely to be relevant by the time you return, if your E-mail system supports creating rules or agents.

"Probably the majority of users don't have the ability to filter messages out or send back vacation messages," said Ron Rassner, a vice president at Creative Networks.

"This is when you find out whether your mail system is flexible enough to meet your needs across the enterprise, and individuals find out if they have a good filtering structure in place," said Tim Sloane, director of Internet infrastructure research at Aberdeen Group, Inc. in Boston.

For example, Simple Mail Transfer Protocol systems and client-based mail engines run rules from the desktop only if the vacationer's system is on and logged in to the network. Server-based systems, such as Lotus Notes and Microsoft Corp. Exchange, run rules as long as the server is up, the feature is enabled and people have been trained to use it.

NOT ALWAYS USEFUL

And "I'm away on vacation" messages don't necessarily discourage correspondence. Mark Calleran, information technology manager at the Salvation Army in London, set up an out-of-office agent in Notes while in Jamaica for a week. There were still 120 messages waiting when he returned.

Those vacation replies also can end up going to every member of an E-mail distribution list, either in-house or over the Internet, if a mail system has been set to generate a reply to every incoming message.

Mass recipients are often less than thrilled to get those notices cluttering their boxes. "I'm on a lot of list servers," said Robert Huss, IT manager of The Horizon Group, a real estate development company in Muskegon, Mich. "Some lists will automatically bump you off if they get one of those vacation messages [from you]."

Not all administrators want to enable the feature. It could increase exponentially the amount of E-mail flying around, said Tom Nesterak, vice president of end-user support services at J & H Marsh & McLennan, an insurance broker in New York. Instead, his firm has an out-of-the-office database that employees can check if they haven't heard back from a colleague.

And not everyone cringes at the thought of high-volume E-mail while they're away. "I'd rather have those messages than have all that stuff happen and not have any E-mail," said Erik Betts, manager of desktop services at Shell Services Co. in Houston. "I find the majority [of the messages] to be useful."

But Rassner suggests returning vacationers overwhelmed by E-mail not waste time slogging through week-old mail. "I'd recommend that people only look at the last day's mail," he said. "We all work in triage anyway."

Murray said that as Novartis migrates to Notes from CC:Mail, the company will be reviewing all E-mail issues, including what to do about unread vacation messages.

And, although he called in for messages during his most recent vacation, he said, "my next one, I'm going to work very hard not to. There's a fine line between computing anytime, anywhere and computing every time, everywhere." □

& **Medium-size firms outsource E-mail in face of skills crunch. Page 53**

HOW TO LIMIT VACATION E-MAIL FLOODS

- Tell people who E-mail you that you will be away
- Set up an "I'm on vacation" automated response
- Use filters to screen out junk and list mail you don't want to see on your return
- Forward messages to a colleague while you're out
- Promote general company policies about limiting E-mail distribution lists

SHORTS

Polfa seeks refund from CA

Polfa Tarchomin, the largest pharmaceutical company in Poland, has asked Computer Associates International, Inc. for a $1 million refund. Polfa is seeking money returned on management information systems provided over the past four years. CA, in Islandia, N.Y., voluntarily replaced Polfa's initial system with a ManMan/X installation, but the company wants a new system. "ManMan/X is an example of very good software, and I personally regret that Polfa did not accept it," said Andrzej Staniszczak, CA's manager in Poland. The case has gone to an independent arbiter in Vienna.

Hold it, feds tell Microsoft

The Justice Department has requested more documents relating to Microsoft's April acquisition of WebTV Networks, Inc. Although it is standard for the federal government to investigate mergers of companies with sales of more than $10 million, industry watchers said there may be concerns about Microsoft owning a significant portion of Internet broadcast patents if the sale goes through.

IRS may get IS expert

For the first time, the Internal Revenue Service may have a computer expert in charge. President Clinton is reportedly prepared to nominate Charles Rossotti as the head of the IRS. Rossotti is founder of American Management Systems, Inc. in Fairfax, Va., an $800 million computer consulting firm. He worked in the Pentagon's Office of Systems Analysis under Robert McNamara in the 1960s. The administration's selection of Rossotti signals its response to persistent complaints that the IRS has wasted hundreds of millions of dollars on new computer systems.

PointCast to beta-test tools

Officials at PointCast, Inc. in Santa Clara, Calif., last week said the company plans this summer to begin beta-testing a series of tools designed to let information systems managers better manage the impact of PointCast's news updates on corporate intranets. It also decided to give away its existing intranet product, PointCast I-Server, effective immediately. The software, introduced in the fall, had cost $995.

Online lawsuit a draw

A lawsuit was settled last week between Total News, Inc. and six media giants over the rights to combine framing and hyperlinks on the Internet. Total News and other litigants such as The Washington Post Co. and Cable News Network, Inc. agreed that the TotalNews site at *www.totalnews.com* could continue linking to the major news services, but it would discontinue using World Wide Web-based frames technology to overlay parts of the target sites with TotalNews' own ads. The suit was considered a possible precedent-setter in determining how commercial sites can legally display links to one another. Another suit over similar issues, filed by Ticketmaster Corp. against Microsoft Corp., is still under way.

SHORT TAKES Advanced Computer Communications, Inc. in Santa Barbara, Calif., last week announced it has won a two-year, $1 million-plus contract to provide an Integrated Services Digital Network-based router network for Western Auto Nationwide, an automotive parts chain. ... Vitria Technology, Inc. in Mountain View, Calif., next week plans to announce a middleware product called Velociti that will help companies avoid overnight batch processing delays when updating their suppliers, customers and internal departments. Prices start at $4,995 on Windows NT and Unix servers. ... Sun Microsystems, Inc. started shipping its Java Web Server 1.0, a platform-independent Web server that uses Java technology to deploy and manage Internet and intranet sites on the World Wide Web. After a free 120-day trial period, the product will cost $295 with Secure Sockets Layer and $95 without. ... In a pooling-of-stock transaction valued at about $280 million, TSW International, Inc. in Atlanta and Thn Indus Group, Inc. in San Francisco will merge.

"You Won't Believe What We're Doing With COBOL."

MICRO FOCUS

Transforming The Enterprise

Business analysis tools for Web on tap

By Craig Stedman

THE TOP TWO vendors of desktop decision-support tools are finally ready to deliver technology that will let users analyze business data via the World Wide Web.

Archrivals Cognos, Inc. and Business Objects S.A. this month will announce versions of their software that run on servers and support data analysis from Web browsers. That should make it easier and less costly to spread query and analysis tools to end users.

Cognos, Business Objects and other vendors already support static views of canned reports from Web browsers. That may be good enough for some casual users, but some decision-support managers said their companies need the full-blown analysis features now emerging.

"Publishing a report [on an intranet] is no different to me than giving someone a paper report off a printer," said David Bruce, manager of database systems at Random House, Inc. in New York. If users don't have built-in analysis capabilities, they can't drill into the data on their own to answer questions, he said.

Random House is beta-testing the Web version of Cognos's PowerPlay online analytical processing (OLAP) software and plans to use it in an upcoming data warehouse project, Bruce said. The server-based software will let the book publisher avoid installing and maintaining PowerPlay clients on each PC, he said.

But Cognos and Business Objects users still will have to show patience.

The first Web release of PowerPlay has about 80% of the desktop version's functionality, but Cognos left out some advanced features such as the ability to build new calculations on the fly. Random House's heavy-duty users initially will require the full desktop PowerPlay, Bruce said.

UP THEIR SLEEVES

Cognos	
Product	PowerPlay Server Web Edition
Function	Server-based OLAP tool
Availability	Late this month on Windows NT; Sept. for Unix beta
Product	Impromptu
Function	Query tool with Web browser support
Availability	Q4
Business Objects	
Product	WebIntelligence
Function	Mixes query and OLAP capabilities
Availability	In beta this month on Windows NT; will ship in second half

Ottawa-based Cognos also isn't ready to release a Web-enabled version of its companion Impromptu tool, which handles less-complex queries than PowerPlay. Impromptu won't get the full Web browser treatment until late this year, Cognos officials said.

Business Objects wouldn't comment on its plans, but sources said the Paris vendor will beta-test its WebIntelligence software this month and will ship it sometime in the second half of this year. Code-named Project Darwin, WebIntelligence is supposed to provide the same functionality as Business Objects' namesake desktop tool, the sources said.

Bank of Montreal's electronic financial services unit runs PowerPlay on a network file server that executives and business unit managers can access. The Web-enabled version will let the bank open its data vault to more users without having to install network drivers and other code on their PCs, said Peter Forrest, a manager in the bank's finance department. □

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• Proven VLDB Support	YES	NO
• Cluster Support Scalability	YES	NO
• Multiprocessor Scalability	From 1 to 400+ processors	From 1 to 8 processors
• MPP Support	YES	NO
• Parallel Query	YES	NO
• Star Queries	YES	NO
• Bitmap Indexes	YES	NO
• Symmetric Replication	YES	NO
• Row level Locking	YES	NO
• OLAP Multidimensional Integration	YES	NO
• Video Storage and Playback	YES	NO
• Text Storage and Search	YES	NO
• Spatial Data	YES	NO

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All eyes on Java's purity, speed

Language poky, but users say they still love it

By Matt Hamblen
ATLANTA

THE VENDOR debate over pure vs. impure Java took on religious overtones at Comdex last week. But users in the trenches took a more pragmatic view and worried about Java's sluggishness.

"We use Java. It's slower than C++, and yet we are Java advocates," said Anthony Pizi, a first vice president at Merrill Lynch & Co. in Plainsboro, N.J. But Pizi said he disagrees with Java zealots who say Java will solve all information systems problems.

Like several IS professionals interviewed at Comdex/Spring '97, Pizi didn't want to side with either of the polar-opposite keynote speakers, Jeff Papows, CEO of Lotus Development Corp. in Cambridge, Mass., and Bill Gates, chairman and CEO of Microsoft Corp. in Redmond, Wash.

100% PURE

Papows declared that the future of information technology depends on "religious insistence on 100% pure Java" applications. And he took swipes at Microsoft's divergence from that path.

In turn, Gates said Microsoft will support Java, but not religiously. "We see it not being the only computer language," he said.

"They call it NC because it stands for 'not compatible.'"
– Bill Gates, Microsoft CEO

Jsva is s programming language that can run the same programs on any computer platform if the implementations adhere to the pure Java standard.

Pizi said he knows about Java's strengths and weaknesses because he is building s $1 billion intranet application for gradual delivery to 35,100 brokers and other users around the world.

The intranet gives brokers and analysts updated stock information from various sources and presents it via one user interface. The interface supports streaming video and eventually will support desktop videoconferencing for discussions with customers.

Christopher Pelley, a webmaster for the government of Sarasota County, Fla., said he leans toward Gates' view of Java. "I love Java, but it's too slow for everything," he said.

For example, Java is too slow for building a spreadsheet, Pelley said. "I don't understand the [pro-Jsva] philosophy that you should trade performance for the sbility to run something anywhere."

GATES DUCKS QUESTIONS

Sam Kelly, s superintendent st s Georgia-Pacific Corp. plant in Monticello, Ga., complained that Gates "mostly dodged" questions about what Microsoft intends to do sbout Java, leaving him unclear about what might happen in the brewing battle.

Gates drew the biggest sudience reaction with his criticism of the network computer. "They call it NC because it stands for 'not compatible,'" he said.

Many laughed, but one listener bristled. The total cost of PC ownership is s big problem that the network computer tries to address, according to Irfan Hamid, sn IS consultant working st s United Nations agency.

The proliferation of support-intensive PCs has overloaded IS departments, and yet "most people only use the PC to do a memo a day," Hamid said. "I think there is a critical mass [of support] for the [network computer]." □

Sun adds on to 100% Pure Java

By Sharon Gsudin

WHILE MICROSOFT CORP. hails it as a sign of Java's doom, many users say Sun Microsystems, Inc.'s move to extend its 100% Pure Java program is a way to get more Java applications running in their companies.

Sun last week sdded a category to its 100% Pure Java program for applications that still have non-Java code but are on their way to replacing that code with Jsva. A spokesman for JavaSoft, the Sun unit in charge of Java, said the specific details of the category will be announced next month. Applications will have to be submitted for review and registered, and software companies will have to commit to becoming 100% Java-compliant within s certain amount of time, the spokesman added.

This move doesn't change the criteria for becoming 100% Pure Java certified, but it creates an intermediate stage. Sun defines Pure Java as an application built with all Java code.

"If a vendor commits to 100% Pure, that definitely will push me toward buying from that vendor," said Kalman Shor, assistant director of MIS at Michael Anthony Jewelers, Inc. in Mt. Vernon, N.Y. "Even if we're getting partial Java up front, I want to know who's working on it."

Microsoft, which has been an outspoken detractor of Sun's Java language and platform, called Sun's latest certification move a "relaxation of the main criteria for purity." "There is virtually no support for 100% Pure," s Microsoft spokesman said.

Evan Quinn, an analyst at International Dats Corp., said the truth about 100% Pure Jsva lies somewhere between the two camps. "Microsoft has s few legitimate points on this," Quinn said. "A very strict 100% Pure approach will cut out some markets for Sun because there are all these applications out there that are almost ready but aren't quite there. Sun needs to recognize that developers have to get from point A to point B."

As an example, Quinn pointed to Minneapolis-based Active Software, Inc.'s Active Web application development tool. Active Software was an early Java-focused start-up, and Active Web has received good reviews and s string of awards. But it couldn't carry the 100% Pure Java tag because the engine kernel was built with C++.

Tom Obrey, chief information officer at Portsmouth, N.H.-based Pixel Media, a multimedia development firm, said if software is pending certification, that is all he wants at this point.

"Everything is s progression," Obrey said. "Everyone in the industry understands the volatility of the technology and the speed that it turns around. Clearly [Jsva] needs to move to 100%, but you've got to get your tools where you can." □

Vendors scramble to head off FTC role in 'net privacy

By Mindy Blodgett

A VARIETY of privacy initiatives aimed at protecting Internet users will move to the Federal Trade Commission's front burner this week.

In s series of hearings, the FTC may decide whether it will step in and oversee privacy initiatives on the Internet or allow online vendors to self-regulate on issues such as online commerce and commercial electronic mail [CW, June 2].

BEAT TO THE PUNCH?

Already, several vendors and online advocates, including Netscape Communications Corp. and Etrust, s consortium formed by the nonprofit Electronic Frontier Foundation in Palo Alto, Calif., have flosted plans aimed at setting privacy standards. Microsoft Corp. also is expected to propose privacy guidelines this week.

The flurry of proposals was sparked by s warning last year by the FTC that unless the Internet industry made progress in setting privacy standards that govern the exchange of personal information, the government might step in. The vendors hope to convince the FTC this week thst no regulations are needed to protect users.

INTERNET STANDARDS

"This is a very charged, emotion-laden issue," said Jang Jeon, vice president of electronic commerce st Liberty Financial Cos. in Boston. "Maybe we just need public awareness and education, so that consumers know they shouldn't be giving out information like credit-card numbers to just anybody. Otherwise, it is s slippery slope."

"This is probably the most important issue before the FTC right now," said Marc Rotenberg, director of the Electronic Privacy Information Center (EPIC) in Washington. "We are hoping that the hearings this week will reveal s clearer picture of where the issue of Internet privacy standards is headed. We just aren't sure we can trust the vendors to regulate themselves."

BUTTING HEADS

Groups such as EPIC are fighting for comprehensive, uniform privacy standards that will protect the anonymity of Internet users. On the other side are vendors snxious to force online users to reveal information that would prove helpful in marketing efforts or making sales.

For instance, World Wide Web sites currently have the ability to plant "cookies" — or data files. Those files can track the Web sites s user has visited, thereby gaining information such ss s user's hobbies. This information can then be sold to sdvertisers and lead to annoying or intrusive electronic mail.

Etrust has formed s consortium of companies dedicated to providing s seal of spproval for sites that maintain users' privacy. Companies pay anywhere from $500 to $5,000 to join, and Etrust sets s code of behavior by which the companies must abide. Members will be audited by selected accounting firms to determine compliance.

Netscape recently proposed the Open Profiling Standard, s proposal supported by 6n companies. The plan would allow Web surfers to stop personal information from sutomatically being sent to Internet sites. □

Senior editor Mitch Wagner contributed to this report.

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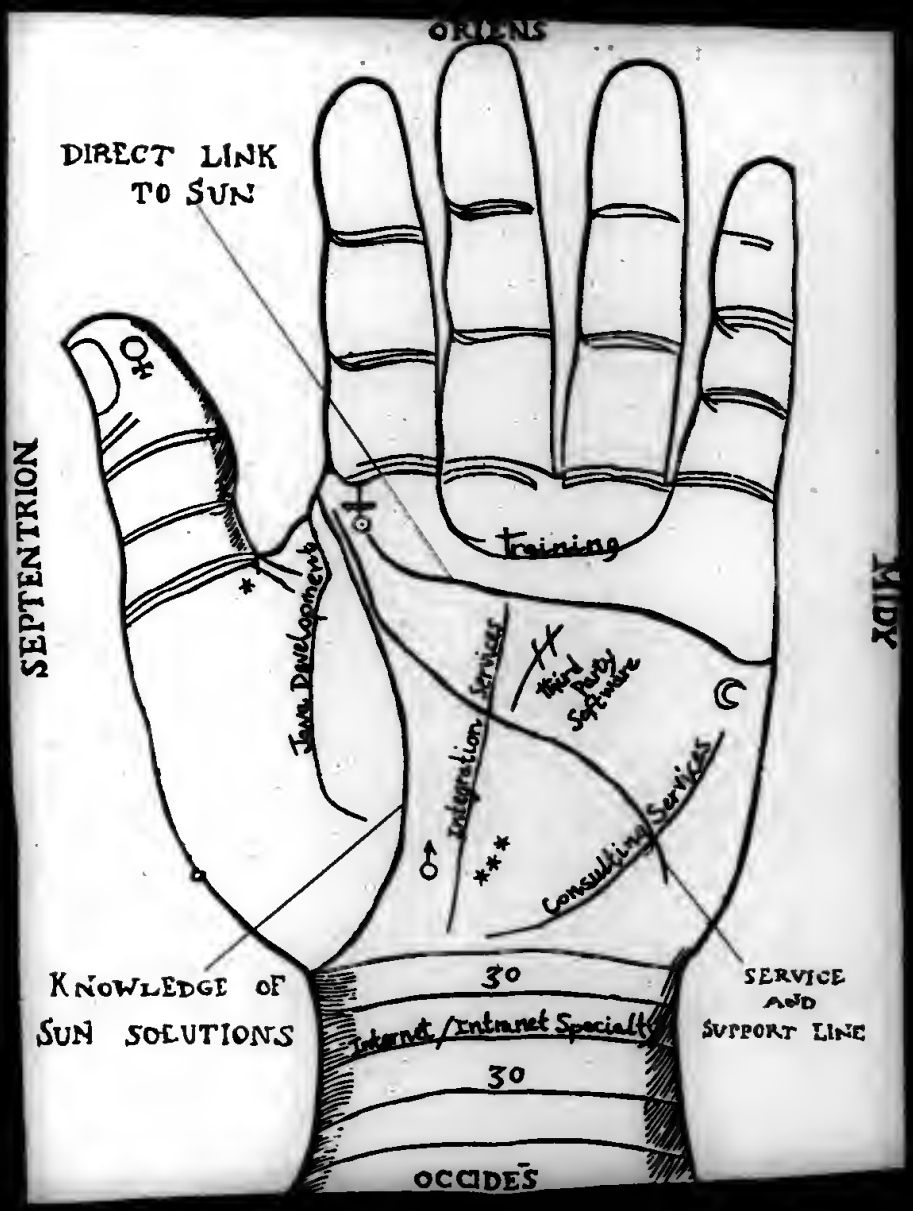

Sun
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Sun

'New Girls Network' emerging

By Laura DiDio
SANTA CLARA, CALIF.

THEY CAME, they networked and now they're ready to conquer.

That was the consensus of the 3,500 women who attended the third annual Women In Technology International (WITI) conference here last week.

Empowerment, mentoring, building a "New Girls Network" and the positive impact that women have on their businesses' fiscal success were discussed at the three-day conference.

There are 7.7 million women-owned businesses that provide jobs for 15.5 million people and generate nearly $1.4 trillion in sales, said Carolyn Leighton, WITI's executive director.

In a recent survey of 400 women sponsored by Avon Products, Inc., 80% said technology was a good way to get into male-dominated fields.

The conference was interspersed with cold hard facts on how much progress women have made in high technology and how far they still have to go.

For example, a WITI-sponsored research paper by Anna van Raaphorst-Johnson found that given a background and capabilities equal to male candidates, only 29% of 500 women respondents felt they would have an equal chance to become the CEO of their companies.

But there have been gains. Carmen Parrish, a computer scientist at Lawrence Livermore National Laboratory in Livermore, Calif., said the openly sexist behavior of a decade ago has changed dramatically with the rising number of professional women in the workplace.

"When I was first starting out in 1984, I was walking through another department when a man stopped me and asked me to fix the copier machine for him. He thought I was a secretary," Parrish said. "That wouldn't happen today when nearly 50% of our technologists and researchers are women."

Lawrence Livermore and many of the high-technology firms present at the WITI conference said their biggest initiatives revolve around mentoring young girls and women to encourage them to choose technology as their career.

In the WITI report, van Raaphorst-Johnson said mentoring and networking activities are crucial for women's continued success in technology and science fields. The paper, based largely on anecdotes collected via personal and electronic-mail interviews, warned technology companies to promote women or risk losing them.

"It's very difficult for companies to find enough talented people to get their jobs done," van Raaphorst-Johnson said. "This is a great time for women to be looking at what doors are opening for them, [and instead] women leave companies out of frustration."

Yet many companies don't know this, in part because women who leave don't disclose their real reasons for fear of being perceived as complainers and possibly impeding their career progress elsewhere.

A woman manager in the audience, who requested anonymity, said she finally reached the boiling point one day when she made a suggestion and got no response. Ten minutes later, a male colleague made the same suggestion and was roundly applauded. "When one of the executives said he didn't know when he'd ever heard such an innovative idea, I stood up and said: 'I do. It was me, and I made it 10 minutes ago! It's *my* idea, and no one else is taking the credit.' They tried to pass it off as an oversight, but they never ignored me again," she said. □

Coping with the server herd

▸ *Tools help IS managers monitor growing number of distributed servers*

By Patrick Dryden

WHOEVER SAID "the more the merrier" wasn't an information systems manager responsible for distributed servers.

Popping up all over are NetWare file/print servers, Windows NT application servers and Unix systems of all kinds. The overloaded operations staff must keep up with their growing numbers, diversity and complexity.

So desperate IS managers are grabbing new products for their already bulging tool kits, such as two server tools being launched this week. One is a multiplatform performance monitor from Concord Communications, Inc.; the other is an expanded Windows NT manager from NuView, Inc.

"It's a big deal to me to buy a tool off the shelf that can change all my NT Server names and passwords at once," said Jack Cohen, staff systems specialist at Coastal Corp. in Houston. NuView's ManageX "directly saves me man-hours for maintenance tasks," he said.

The energy provider will eventually have more than 300 Microsoft Corp. Windows NT Server systems to support, so automation is vital for the already fully utilized staff to cope, Cohen said.

Concord's Network Health suite lets managers profile system status and availability

Version 2.0 of ManageX adds 50 management functions requested by early users, plus enhancements such as console customization and the ability to consolidate the event logs for all servers. Houston-based NuView said the price tag is $299 per server.

Meanwhile, Concord has added server coverage to its Network Health suite of performance monitoring software. Here the goal is to broaden administrators' view of internetworks, applications and systems while evaluating service and troubleshooting problems. That is a welcome development for DSC Communications Corp. in Plano, Texas.

"We wanted to have the same reference points and sample time for routers, servers and everything when someone reports a problem," said Dave Kramer, senior manager of network engineering and operations at DSC.

Previously, diagnosing slowdowns was tough because network and systems managers had separate tools. Those just keep specific alarms and events, Kramer said, not a baseline to reveal trends. And comparing reports was difficult.

By adding Network Health Server to his Concord kit, Kramer said he gained "a global vision of what's going on." □

'It's time for me to go'; Marengi exits Novell

By Laura DiDio

JOE MARENGI, Novell, Inc.'s president and chief operating officer, formally resigned from the struggling Provo, Utah-based software company last week. In an exclusive *Computerworld* interview, Marengi said his reason was simple: turnaround burnout.

Joe Marengi: Turnaround burnout at Novell took its toll

"I just didn't want to spend another year working on a turnaround. And this latest round of layoffs of 1,000 people is tough. A lot of my friends are getting pink-slipped. It's been a great nine years, but it's time for me to go," he said.

Marengi said he has several job offers, but he declined to be specific. "I will be with Novell through the end of the month and help [Chairman and CEO] Eric [Schmidt] and the board with the ongoing restructuring," he said.

Just 10 days ago, Novell posted a stunning $14.6 million loss for its second fiscal quarter, ended April 30. The company also announced it will cut about 18% of its workforce.

Marengi scoffed at reports published elsewhere that said Schmidt had asked for his resignation or that his departure was prompted by Novell's financial woes. "The decision was mine — 100%," Marengi said.

"And Eric has been very supportive. He's been a gentleman to the max. And I have no doubt that he will put together a team that will successfully get Novell back on track," Marengi added.

In a conference call last month with reporters and analysts, Schmidt said 30% of Novell's management team had been terminated, asked to leave or resigned. At the time, Schmidt said management "hadn't been that good" at dealing with Novell's ongoing sales slump and market-share erosion to Microsoft Corp.'s Windows NT platform.

"I've heard all sorts of wild stories, but the truth is very straightforward. I was brought in to keep the company going while we searched for a new chief executive. I've done that, and it's time for me to go. It's just the right thing to do — for me and Novell," Marengi said.

Marengi, a nine-year Novell veteran, was named president last September when former President and CEO Robert Frankenberg resigned. He previously was executive vice president of worldwide sales and field operations. Marengi also was former vice president of channel sales, where he was considered an aggressive, no-nonsense executive who was great at rallying the troops, said a Novell insider who asked not to be identified.

"It's not going to be any picnic around here for the next few months. We're all walking on eggshells waiting to see who's going to get pink-slipped," the source said. □

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Quality crisis haunts laptops

CONTINUED FROM PAGE 1

forcing users to get tough with vendors. For example, Jon Sweet, director of information management at Ducharme McMillen & Associates in Fort Wayne, Ind., said his company grew so disgusted with Compaq Computer Corp. notebook problems — which included keyboard lockups and freezing screens — that the company has stopped buying them.

"We have people on the road, and it is critical that the laptops work, or that they can be replaced quickly," Sweet said. "The main problem was that screens were freezing up while you were typing. ... It just became unacceptable." Compaq officials said the company has fixed those problems.

TOO MANY CHIPS?

Gartner laid much of the blame for the quality issues on the doorstep of Intel, which has released a rapid stream of laptop chips during the past year. The pressure to keep up has greatly reduced the amount of time vendors spend testing notebooks, Fiering said.

Charles Carey, product launch manager at Intel, said the company "realizes the predicament the industry is in. ... Notebooks are very complicated to design."

But Carey denied that the pace of chip releases is to blame for quality problems.

"The frequency is driven by market demand," Carey said. "Slowing down releases would not be a service to users ... who want desktop performance."

Because of the competitive nature of the market, vendors can't afford to delay shipments while they iron out all bugs.
– Leslie Fiering, Gartner Group

Backing Intel is Randal Giusto, an analyst at International Data Corp. in Framingham, Mass. "The quality problems are definitely the worst they have been in the past two years," he said. "But a lot of the problem is that because so much product has been shoved out into the channel to meet demand, the volumes are bigger and problems are magnified.

"And the vendors have to take the blame for this," Giusto said. "Not all the vendors are having problems, so some are doing it right."

LOTS OF BLAME

Actually, Fiering's report castigates the entire notebook industry for a litany of problems, including hard-drive bugs and failures with power supplies and memory.

"The quality problem is really pervasive, and it seems to be affecting pretty much all the vendors," said John Dunkle, an analyst at Workgroup Strategic Services, Inc. in Portsmouth, N.H.

Gartner analyst Ken Dulaney said users of laptops from No. 1 laptop vendor Toshiba America Information Systems, Inc. have complained about an inability to get repairs done swiftly because of a lack of spare parts and delays in getting assistance from customer service.

BETTER SERVICE

Maggie Merante, director of enterprise services at Toshiba, said the company recently signed an agreement with PC Service Source, Inc. in Carrollton, Texas, to provide more spare parts to customers.

The company is also adding customer service staffers and increasing the hours for call-ins, she said.

Merante said Gartner is overstating the problem in the industry. "I wouldn't say there is a crisis," she said. "There has been a general downward trend in the industry as a whole ... but our laptops remain of very high quality."

Because of the competitive nature of the market, Fiering said, vendors can't afford to delay shipments while they iron out all bugs.

By prioritizing bugs, the vendors can ship the systems and work out remaining bugs with fixes, patches and help-desk support. That policy leads to headaches for users who waste valuable time and productivity chasing fixes and patching laptops, Fiering said.

"By the nature of the form factor of a laptop, they require much more testing than desktops," Fiering said. "You have to deal with the trade-offs between size, price, performance and thermal issues."

Dulaney said that to battle the problems, users shouldn't stay loyal to one vendor but should certify more than one in case there is a need to switch to a more reliable vendor quickly.

Industry observers said users should also consider purchasing extended warranties. □

Vendors concede problems

Officials at laptop vendors said they are trying to address performance and service problems. IBM PC Co. officials denied they have serious difficulties with dead-on-arrival laptops and added that they submit the laptops to a rigorous testing standard.

"There are serious problems brewing in the industry," said Steve Ward, general manager of worldwide mobile computing at IBM. "But it's not Intel's fault. ... Our users want the latest, faster laptops."

But Gartner Group said the vendors and Intel should work together to release only one new chip per year to allow for time to fix bugs. And users agreed.

"There is often very little increase in performance between chips, such as between the 133 and the 150 [MHz], so it seems unnecessary," said Fred Winograd, chief technology officer at Montgomery Securities, Inc. in San Francisco. "I'd like to see them slow down." — Mindy Blodgett

& PDA use grows among health care workers. Page 39

New apps drive capacity planning

CONTINUED FROM PAGE 1

ness Research, Inc. in Hampton, N.H.

For example, when book retailing giant Barnes & Noble, Inc. opened its online store recently, the biggest challenge John Kristie faced was figuring out what kind of volume his server platforms could handle.

"We knew going in that our site would be very large and that we needed some robust technology to handle the volume we expected to have from the start," said Kristie, vice president of Internet services at New York-based BarnesandNoble.Com. "The challenge was in trying to simulate a realistic volume beforehand."

KEEPING TRACK

Barnes & Noble built a "Web farm" consisting of several Unix and Windows NT servers, each running small parts of the applications. That way, the company was able to keep better tabs on capacity and quickly plug in additional hardware where needed.

Dunlop Tire Co. in Amherst, N.Y., also follows a modular approach.

"We don't want a lot of excess capacity sitting around, and we don't want a big generic server to handle all of our applications," said Dennis Courtney, Dunlop's chief information officer.

The company is migrating mainframe applications to several small Unix servers, each tweaked for specific tasks. "It does require a little more care and feeding to have a number of boxes like these," Courtney said. "But it is still better than putting all your applications in one box" and then running into scalability issues.

"We don't want a lot of excess capacity sitting around"

SIZING SUITES UP

Underestimating requirements could be critical, especially on the World Wide Web. But users of complex client/server suites from companies such as The Baan Co. and SAP AG are running into similar capacity planning issues.

"We look at our transaction load and expected database structure and then add 50% to any estimate to determine what [system] we need," said a veteran of many client/server suite installations at a manufacturing company in the Northeast, who asked not to be named.

Increasingly, vendors are pitching in as well. Companies such as Hewlett-Packard Co. and Digital Equipment Corp. offer a range of configuration services and benchmark centers that let users simulate full application loads.

HP users can test Baan applications at a recently opened Baan competency center, and the company also is working with Microsoft Corp. to set up a similar testing facility for Web applications.

Others prefer to build in the headroom up front. For example, one user who piloted a data warehouse on a Windows NT server discovered he would need more space to grow and jumped to a more-powerful AS/400.

"Data warehouses grow much faster than other applications because you keep building additional tables and adding subject matter. For us, the AS/400 has a huge amount of top-end room to build this up," said Larry Overstreet, a systems engineer at Dayspring Greeting Cards in Siloam Springs, Ark. □

Perot unit bids for Nets

A PSAOT SYSTSMS COAP. subsidiary has offered $9 million to take over the assets of Nets, Inc., the bankrupt Internet company headed by former Lotus Development Corp. chief Jim Manzi.

PSC Technology Phoenix, Inc. made the bid May 30, three weeks after Nets — a developer of a business-to-business Internet mall — filed for Chapter 11 bankruptcy protection.

Nets agreed to the offer, but it is up to Bankruptcy Court Judge Carol Kenner to decide if PSC's bid is the best one available. A hearing is set for June 17. Perot Systems had already moved to hire Nets' core developers by signing up 60 engineers.

Although it isn't certain whether all creditors will be paid in full, it appears unlikely. In its filing, Nets listed liabilities of $10.2 million and further "fixed liquidated unsecured debt" of $5 million. — *Stewart Deck*

Risk-taker leads IS revamp

CONTINUED FROM PAGE 1

months at 633-bed Staten Island University Hospital (SIUH).

In just two years, Carney drove the following changes:

- Winnowed the hospital's 45-member information systems department and later added 20 project leaders and PC/LAN technicians.
- Junked 1,000 dumb terminals for a fiber-optic network of 900 LAN-based PCs.
- Updated the hospital's core information systems with a $5 million suite of client/server packages from HBO & Co. in Atlanta.
- Directed a $6 million document imaging and radiology project that is supported by a new $1 million Asynchronous Transfer Mode (ATM) network.

Senior and middle managers throughout SIUH have supported Carney's growing IS budget, which has nearly doubled since he joined in 1995 from $3.75 million to $7 million. "Generally, I don't have skirmishes over [IS] funding," Carney said. "Not because I'm a sales guy or a smooth talker, but I do my homework and explain the business benefits — how do you argue against that?"

So far, the hospital's information technology investments have been pulsating paybacks. On the teleradiology project alone, the hospital expects to save $4 million in five years by wiping out film, storage and labor costs with an optical storage system.

The system also makes it easier for patients to get treated by the hospital because patients — especially the elderly — won't have to be shuttled between nursing homes and the hospital for tests such as chest X-rays. The tests instead could be done off-site by a radiology technician and uploaded on to the optical system, where physicians can make their diagnoses. The hospital expects to begin piloting that system by year's end.

Few hospitals have taken the leap into teleradiology, largely because of the cost of setting up an ATM or other high-bandwidth network. The key for strategists such as Carney is to cost-justify these networks to support multiple applications, said John Piescik, a health care consultant at American Management Systems, Inc. in Fairfax, Va. Carney did that by illustrating how the network would make it easier for physicians to access the hospital's new clinical repository off-site.

STAFF-ECTOMY

With his aggressive approach, Carney also has faced his share of challenges. For example, when Carney handed pink slips to several of the hospital's longtime IS staffers just six months into the job, the air was let out of his car tires a few times.

Downsizing didn't sit well at SIUH, a community hospital that historically has been a lifelong employment center.

"We had to make some unpopular decisions," said Carney, whose on-the-job training in health care surrounds him in the form of a-foot-high stacks of trade magazines on his desk.

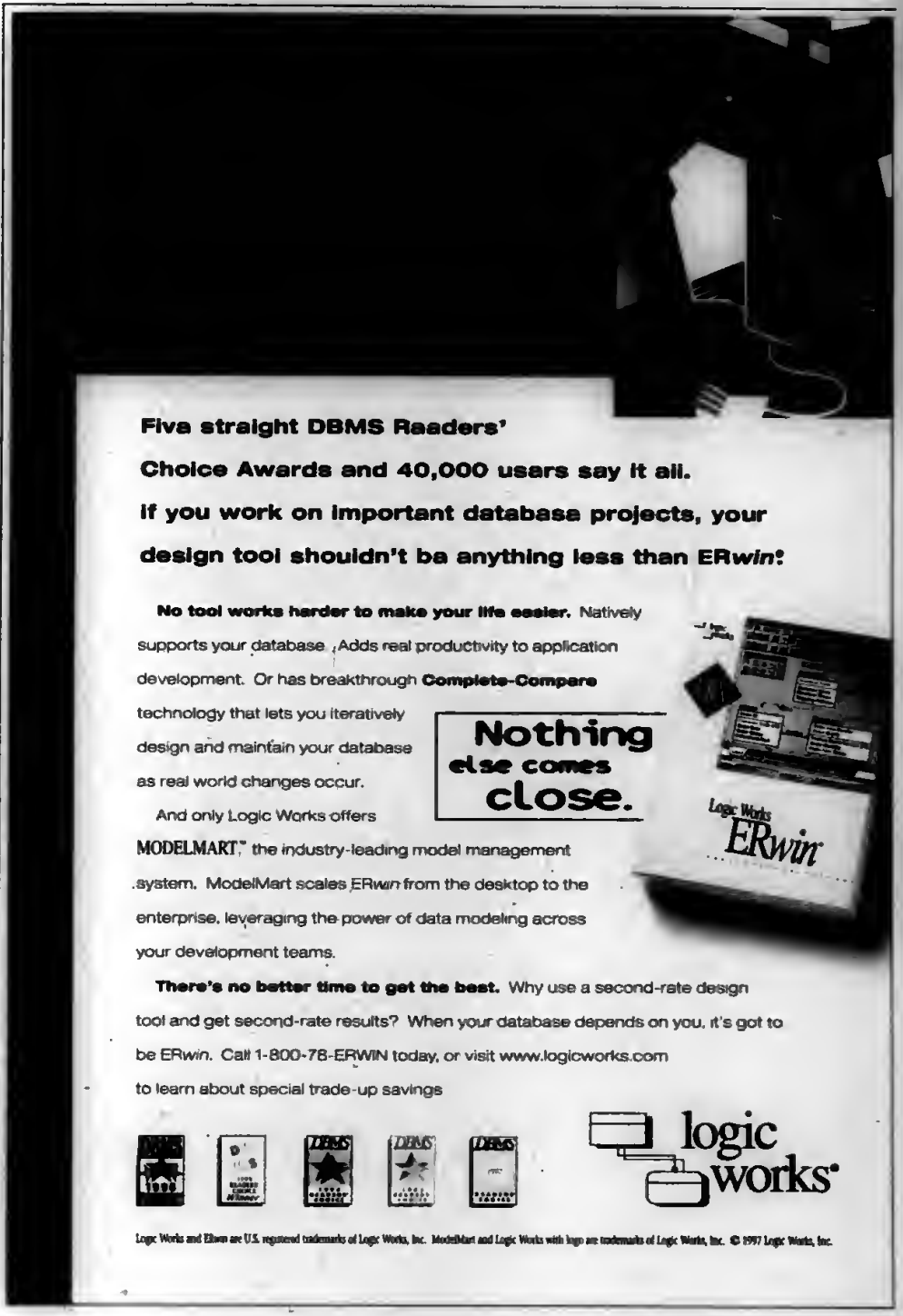
Fortunately for Carney, senior managers at the hospital wanted someone who could shake things up. The hospital itself is leading-edge, having pioneered the use of stereotactic radiation, a radiation therapy treatment used on brain tumors.

One thing senior managers at SIUH didn't want was a grizzled health care IS veteran accustomed to the old way of doing things. They wanted someone with vision.

"Rick is a breath of fresh air," said Joseph Pisani, executive vice president at SIUH and Carney's boss. Pisani said the hospital recruited Carney from the service industry because he had experience working with end users to map process changes with the right technology for less cost.

"We want IS to be the center of SIUH and the health care community — not that we're control freaks or anything," Carney laughed, gazing at the Manhattan skyline from his waterfront office.

For Carney, the view just keeps getting better. □



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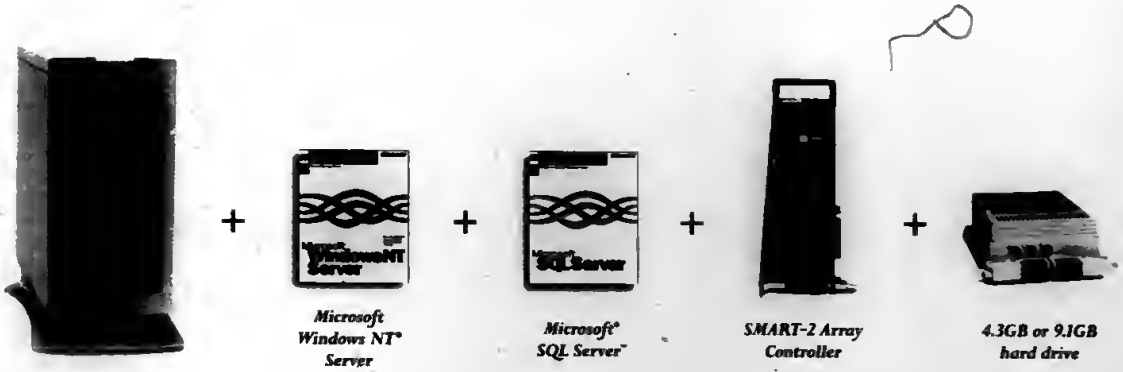

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Self-service groupware rides the 'net

▸ *Suite of applications eliminates need for IS intervention*

By Barb Cole-Gomolski

IF USERS CAN CULL information from intranets and get their electronic mail via the World Wide Web, perhaps they are ready for self-service groupware.

Changepoint International Corp. last week introduced Involv Intranet, a suite of Web-ready groupware applications that users can try without information systems intervention.

That approach could save IS development dollars and the cost of installing groupware on desktops. Because the library of groupware applications can run on Lotus Developroent Corp.'s Domino server, it could help companies better leverage existing servers. Or users could rent the applications running on Changepoint's servers, which would let sites deploy groupware without a large investment. "On the surface, this is a good idea that is based on the need for groups of people to occasionally plug in and form a group," said Steve Weissman, president of Kinetic Information, a market research firm in Waltham, Mass. "The question is, how many people really need to do this?"

CHEAPER, FASTER

Phil Usher, first vice president of groupware at Countrywide Home Loans, Inc. in Calabasas, Calif., said prewritten groupware could reduce development costs and speed up the time it takes to deliver such applications.

"But if your volume of transactions gets really high, you'll probably want to integrate the groupware application with your own back-end data systems," Usher said.

> "On the surface, this is a good idea that is based on the need for groups of people to occasionally plug in and form a group"
>
> Steve Weissman
> Kinetic Information

Changepoint, a unit of Changepoint Corp. in Richmond Hill, Ontario, will offer a bundle that includes a corporate Web site, an administrative console and unlimited end-user access for $25,000 per year.

The groupware applications — which include project collaboration, discussion and software management features and a custom application template — will cost $5,000 each. The software will be available at the end of this month. Renters can expect to pay $25 per user per month for the collaboration module and $10 per user per month for the discussion piece.

The Involv project collaboration application lets clients easily check the status of projects by using a Web browser. It also helps bring together users in different cities, said Andrea Shaw, interactive communications director at Russell, Inc., a Web site development firm in Toronto. "Part of our team is in Boston, part of it is in Toronto and the client is in Chicago," she said.

Previously, developers at Russell would swap Microsoft Corp. Project files with clients via E-mail, but often clients couldn't read the files because they didn't have the appropriate software.

A custom groupware application wouldn't be practical for Russell because the company does four or five projects each year and couldn't predict which platforms would be installed at those sites.

Usher said it user concerns about security, not a lack of demand for such applications, will be the biggest hurdle for self-serve groupware. "Lots of businesses are too paranoid for something like this," he said. □

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#1 In Detection: Trend Outperforms McAfee In Independent Reviews

#1 In Windows NT Protection: Trend Has NT Products At Every Level, McAfee Is Missing Key NT Developments

#1 In Customer Priorities: Trend Specializes In Anti-Virus, McAfee Diversifies

#1 In Server Solutions: Trend Focuses On The Server, McAfee Is Still Tied To The Desktop

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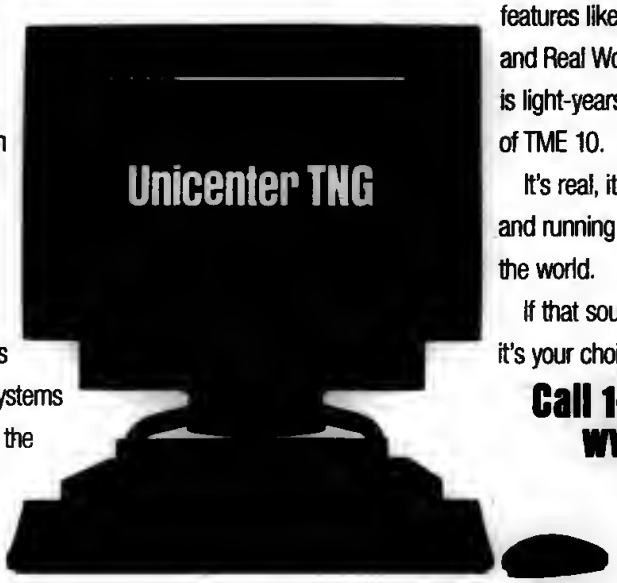

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S Standards

Unix users stymied by Oracle OLAP delays

▶ *Express for NT updates arrive; Unix support not due until fall*

By Craig Stedman

ORACLE CORP. is trolling some new bait for its Express decision-support software.

But users will have to keep waiting for the choicest morsel: Unix ports of the latest Express Server database.

The company this week will announce releases of several products in the Express family, its online analytical processing (OLAP) technology. Included is an update of Express Server 6.0 for Windows NT, a World Wide Web-enabled implementation that first shipped last fall.

But Oracle officials said Unix support for Express Server 6.0 won't start materializing until September, nearly a year behind the original NT release. Unix versions of the multidimensional database were originally due in March.

The delay is complicating things for some Unix-oriented shops that rely on Express for business analysis and want to tap in to its Web capabilities to spread OLAP tools to a wider user base.

For example, Thomas & Betts Corp. is implementing a new release of Oracle's Sales Analyzer application for Express that includes a Web browser client. That will make it easier to expand Express from 10 users today to 100 or more in the future, said John Tepedino, a systems analyst at the Memphis maker of electronic components.

"People are screaming for the information, so it was worth the extra time and effort" to bring in an NT box as an interim platform for Express Server 6.0.
– John Tepedino, Thomas & Betts

But the lack of Unix support drove Thomas & Betts to bring in an NT box as an interim platform for Express Server 6.0. "People are screaming for the information, so it was worth the extra time and effort," Tepedino said. But Express eventually will be moved back to the same Unix server that holds the company's relational data so end-user access will be more seamless, he added.

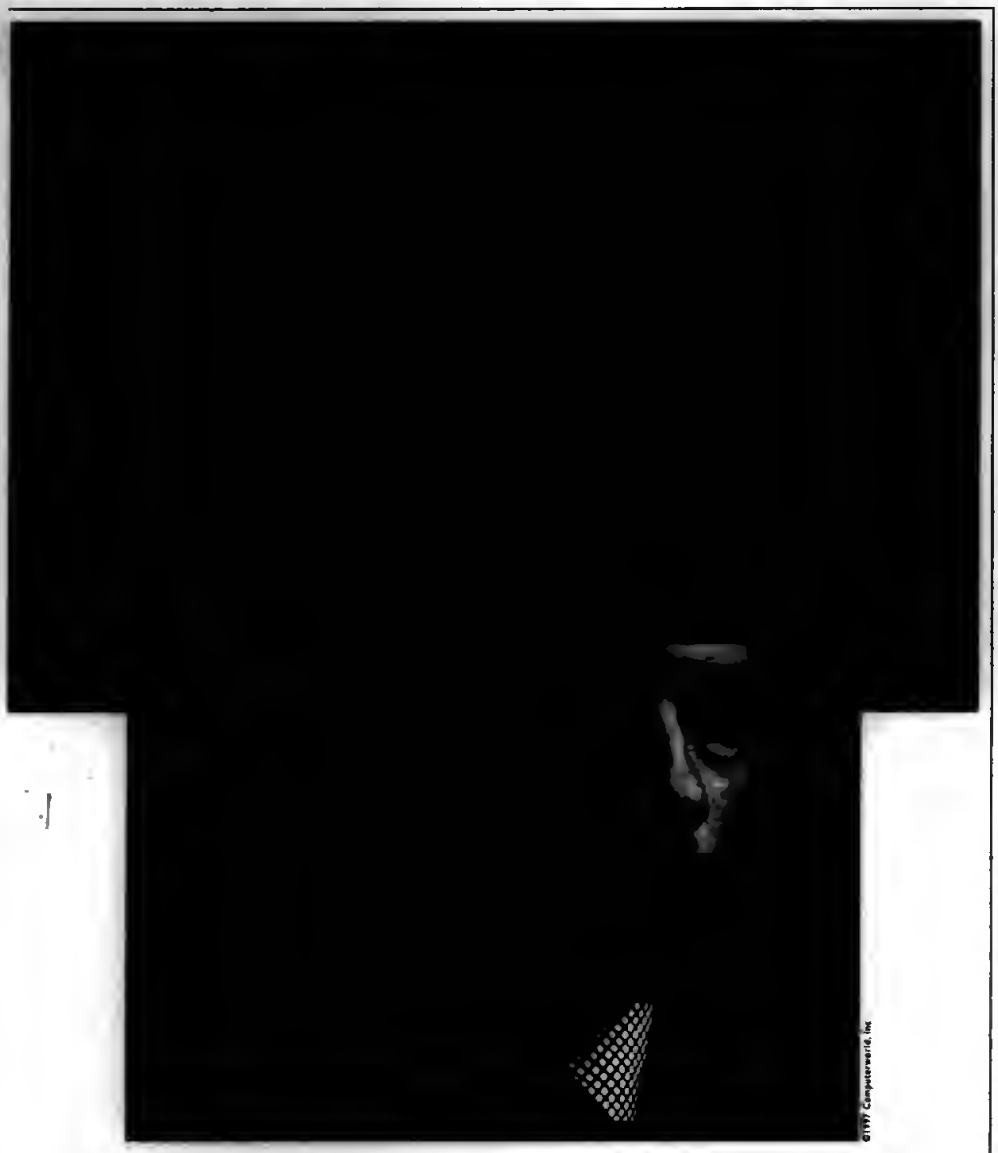
KNOCKING ON ORACLE'S DOOR

Pacific Gas Transmission Co., which operates a natural gas pipeline in the Northwest, wants to use Express Server 6.0 on a Unix server for a new application that would let its external customers read and analyze customized usage reports via the Web.

The Portland, Ore., company is just finishing an installation of an earlier Express release for internal analysis uses, so the Web project hasn't been a pressing concern so far, said Bill Toliver, director of Internet services at Pacific Gas. "But we'll be knocking on [Oracle's] door for that pretty soon," he said.

David Menninger, senior director of Express product marketing at Oracle, said the Redwood Shores, Calif., vendor put a higher priority on NT because the OLAP line previously didn't support the Microsoft Corp. operating system. Sales Analyzer and a companion financial analysis tool are just now becoming available on NT with these new releases.

The Express Server 6.0 update for NT boosts performance by up to 30% and adds support for changing OLAP data from 32-bit Excel spreadsheets, Menninger said. Meanwhile, Sales Analyzer and Financial Analyzer can now run on slimmed-down Windows clients. □



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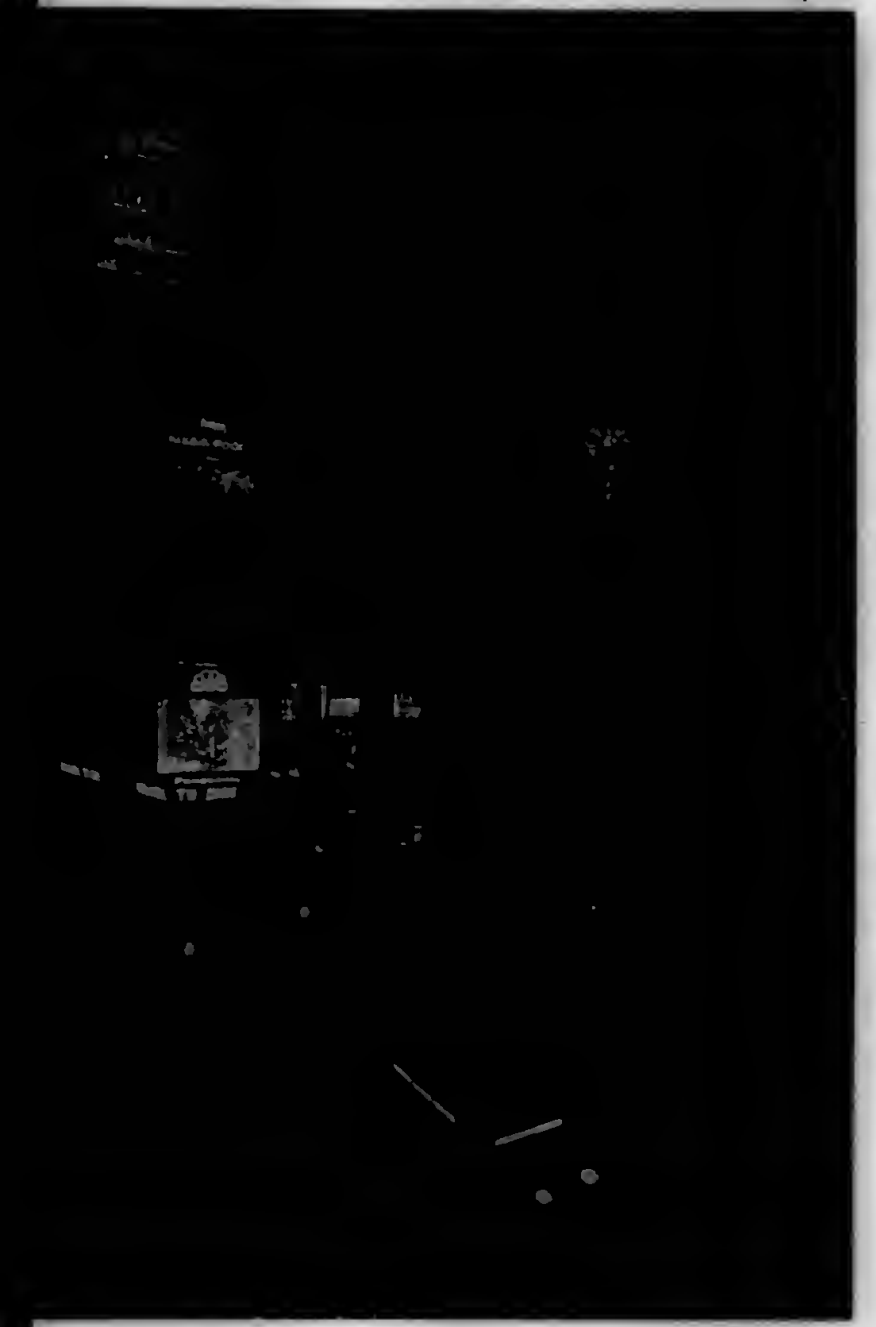

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Cybersleuths on the trail

CONTINUED FROM PAGE 1

gun" that could lead to a courtroom victory.

For example, Vermont Microsystems, Inc. won $25.5 million in a 1994 trade secrets theft case after the discovery that file directories at Autodesk, Inc. had the same names as the original directories at Vermont Microsystems.

Electronic evidence also played a role when Chevron Corp. paid four plaintiffs $2.2 million in 1995 to settle a sexual harassment case that involved allegedly offensive E-mail.

Similar lawsuits involving allegations of sexist or racist computer messages are pending against Citibank, Morgan Stanley & Co. and R. R. Donnelley & Sons Co.

DIGGING FOR DATA

An example of how a forensics investigator recovers E-mail for courtroom evidence

STEP 1

Interview IS managers and users to identify where the E-mail is likely to reside. Some is on backup tape, and some is "active" on end-user PCs.

STEP 2

Make evidentiary copies of backup tapes and PC contents. Adhere to strict "chain of custody" requirements.

STEP 3

Dump E-mail copies into a batch file for text searching. Remove duplicates.

STEP 4

Print a list of E-mail user names and subject lines for review by lawyers on both sides.

STEP 5

Print full copies of pertinent, requested messages for lawyers to submit as evidence.

For IS managers, the arrival of a forensics team is like their worst nightmare come true. In a formal and tense interrogation called a deposition, IS managers have to explain how they do their job and why some computer records are retained and others aren't.

"From a corporate point of view, what could be more terrifying than thinking someone else will come in and feel through your underwear drawer?" asked Greg Stern, a lawyer at an East Coast insurance company, who has seen the process.

So IS managers would do well to understand how old backup tapes, server logs and other unsightly computer residue can cost their companies millions of dollars in court, experts said.

Electronic files contain much more information than paper — and the most telling details are the ones you can't see on screen.

"What's most useful to us are the hidden copies of a document people don't know exist. But you can find them in hard drives and backup tapes," Feldman said. They can reside in printer and fax buffers, too.

Feldman got into computer forensics in 1991 by going to work at a start-up called Electronic Evidence Discovery, Inc. Nine months later, she quit to start a competing company.

She and former boss John Jessen are still bitter rivals. But the two are the best-known commercial detectives who work the computer turf. And they are in demand. Experts said discovery requests for computer files have jumped from 2% of all discovery requests to 30% in the past five years.

GOOD IDEA, BAD EXECUTION

Still, many lawyers don't understand how to use computer files. Feldman told the story of a U.S. Department of Justice case three years ago in which the department demanded electronic evidence from the defendant. That was smart. But agency lawyers asked that it all be converted to WordPerfect files. That was dumb.

Converting from a native format wipes out information that is invisible to users but crucial to computer sleuths. That includes genealogy tidbits in a header that indicate when a file was created and updated and, in some cases, by whom. (The Justice Department has since reformed its practices.)

In fact, different operating systems and software packages have quirks that electronic detectives can exploit.

Windows, for example, makes a handful of unnecessary copies of a document that it stashes in several subdirectories. So it is easier to recover supposedly deleted files on Windows than on Unix, Feldman explained.

But Unix machines generally keep more data about what has transpired on the system. That is useful for following the tracks of wrongdoers.

E-mail discovery is more tricky. Most mail systems can't be searched by keywords — which lawyers would love to do — because messages are saved inside the E-mail package and are usually compressed. So recovering E-mail is a lengthy process (see chart).

"A lot of people think this is a flashy business. You go in, get the offending E-mail and win your client millions of dollars. But that's a minority of the time," Feldman said. "It's a lot more drudgery than they think."

The workload can be huge. A case filed in 1995 against a unit of the U.S. Department of Agriculture, for example, has so far generated 53G bytes of data from 27 mainframes and several minicomputers and PCs in four states and the District of Columbia. That includes a year's worth of E-mail — and doesn't include the 6,000 backup tapes Computer Forensics has yet to scour.

STOLEN SECRETS?

Sometimes Feldman is called in when a company is only contemplating a lawsuit. That's what happened when a departing scientist left his PC behind and his former boss was worried about trade-secret theft.

Leftover E-mail and files turned up nothing juicy. But then Feldman looked in an area of the Windows 3.11 operating system few users know about. There, she found pieces of a PowerPoint presentation obviously created for the ex-employee's new firm. And the information was very similar to the old firm's proprietary data.

Electronic Evidence's John Jessen and a team of 25 find legal evidence buried in backup tapes

Feldman asked that *Computerworld* not reveal the secret Windows locale. "It's one of my best tricks," she said, winking a blue eye.

But here is some free advice from the woman who otherwise charges $235 per hour: Destroy old computer files, including E-mail and voice mail, on a regular schedule.

"Many, many companies will have a records management policy for paper but none for electronic information. That's stupid," Feldman said.

But — and this is a big one — don't suddenly start purging files after your company gets hit with a lawsuit.

Judges throw the book at defendants who erase evidence after a legal problem surfaces, she said. "You think you're helping, but destroying evidence means you lose everything." □

Running up big bills

Producing court-approved electronic evidence isn't cheap; it sometimes runs into six or seven figures. The question is, who should pay for it?

Some judges have said computer files are no different from paper files, so defendants must, at their own expense, collect and produce electronic information requested by plaintiffs during the evidence discovery process.

But other courts have ordered plaintiffs — who usually make the request for evidence — to pay for the job.

Either way, computer evidence is expensive to identify, locate, copy and produce. In corporate cases, costs can run from $50,000 to $100,000 or more, depending on the scope of the inquiry. Million-dollar price tags aren't unheard of.

For example, sifting through 12 months' worth of E-mail created by 50 people would cost $60,000 to $75,000, said Jan Feldman, president of cybersleuth firm Computer Forensics.

"You can really burn through some money," she said.

"It does take a fairly big case to justify retaining a computer forensics specialist."
— Barry Johnsrud, Eisenhower & Carlson

No kidding. Feldman's company and rival Electronic Evidence Discovery both bill like lawyers — time and materials per hour. Rates depend on the investigator's expertise, but project leaders typically charge $125 to $175 per hour, and the top people charge even more.

"It does take a fairly big case to justify retaining a computer forensics specialist," said Barry Johnsrud, a lawyer at Eisenhower & Carlson PLLC in Tacoma, Wash. The law firm has hired Feldman for two commercial litigation cases in the past two years.

Johnsrud said with a laugh that Feldman herself charges nearly twice his $145 hourly rate. — *Kim S. Nash*

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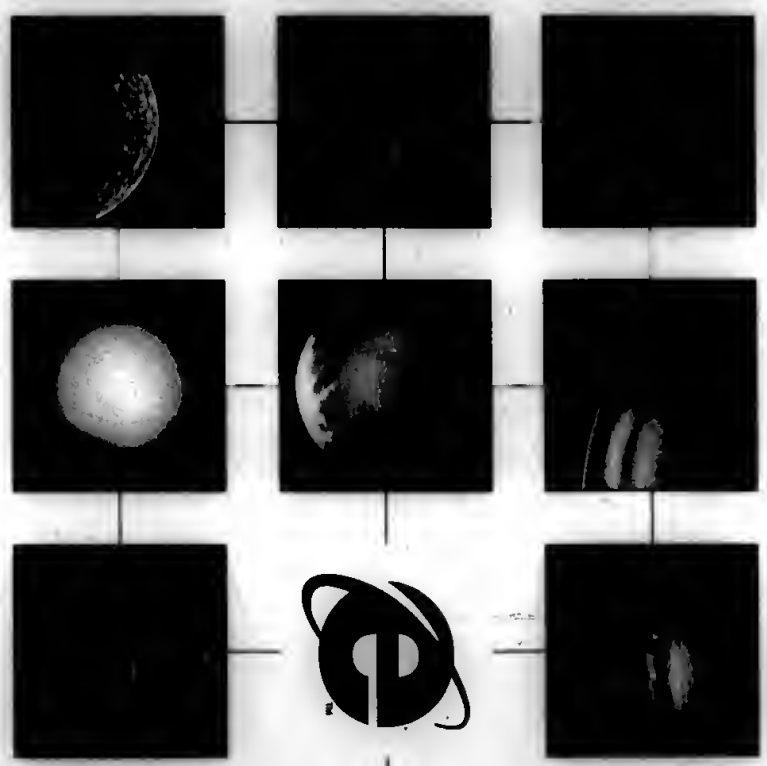

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Briefs

Amdahl back, with low-end mainframes

By Tim Ouellette

MAINFRAME PIONEER Gene Amdahl has gone back to his roots.

Unlike with his first company — Amdahl Corp., which he left in 1979 — this time Amdahl won't be competing directly with IBM's mainstream mainframes. Instead, Commercial Data Servers, Inc. (CDS), his latest venture, is developing low-end, low-cost mainframe systems for niche uses, while tweaking IBM's air-cooled CMOS mainframe processors to new heights on the high end.

That nonconfrontational strategy should help CDS post a more positive record than some of Amdahl's other start-ups.

Sunnyvale, Calif.-based CDS was launched in 1994. Its first salvo is this week's shipment of the CDS104, a small-scale, 5- to 7-MIPS mainframe server that will come bundled with IBM's OS/390 mainframe operating system, a high-end I/O system and internal disk storage.

CDS104, which targets the year 2000 problem, will be sold as an easy-to-install testing platform. The $150,000 box will cost roughly $6,000 per month to run, almost half as much as other small-scale mainframes such as IBM's Multiprise [CW, Feb. 10] or older used systems, according to Ron Hankison, CDS's vice president of product development.

HELP FROM A NEIGHBOR

To get these boxes on the street with fewer than 50 staffers, CDS has turned to Amdahl's original creation, Amdahl Corp. (right down the street in Sunnyvale), for help. The firms inked a $22 million deal for Amdahl to do all the installation, service and maintenance for the CDS104.

But CDS won't limit its efforts to small-scale mainframes. Engineers are also trying to improve on IBM's CMOS processor technology by developing cryogenic — basically deep-frozen — versions of the processors to speed them up.

These processors could run up to 150 MIPS at -198 Celsius, double the speed of current IBM systems and equal to the power of Hitachi Data Systems Corp.'s Skylines.

"With the CDS104, they want to get into the market quickly and get some cash flow to keep them buoyant and fund research and development on the high-end processors," said Jerry Sheridan, an analyst at Dataquest in San Jose, Calif. "Eventually, they could move on to have a completely scalable product family." □

GENE AMDAHL'S BUSINESS START-UPS INCLUDE:

Date	Company	Focus	Status
1970	Amdahl	Mainframes	Still in operation
1980	Trilogy Systems	Supercomputers	Went bankrupt
1980	Ehxsi	DEC-compatible systems	Now a restaurant holding company
1987	Andor Systems	Midrange CMOS systems	Went bankrupt in 1994
1994	Commercial Data Servers	Mainframe-compatibles	Still in operation

No cause for Intel alarm

▸ *Healthy company hit by slow sales in Europe and product transition*

By April Jacobs

ANALYSTS BLAME slower-than-normal European sales and a transitional phase in Intel Corp.'s chip offerings for poorer-than-expected second-quarter earnings.

After the Santa Clara, Calif., chip maker announced late last month its expectations for second-quarter revenue, its stock dropped 13% last week, according to Megan Hackett, an analyst at Standard & Poor's Co. in New York. Intel's stock was at $145 on June 5.

On May 30, Intel officials said the company expected second-quarter revenue to be 5% to 10% lower than its first-quarter revenue of $6.4 billion. That would still be up from last year. The company also expects expenses to be 7% to 9% higher than first-quarter expenses of $1.3 billion.

Intel reported revenue of $4.64 billion for the first quarter of 1996 and $4.62 billion for the second quarter, which ended June 29, 1996.

SIGNIFICANT MARKET

Hackett said the stock hit was a fairly significant 7 on a scale of 1 to 10 and noted that European sales amount to 28% of Intel's revenue.

"Basically, they've really emphasized the fact that Europe has been weak," Hackett said. Also doing less business are Intel's lower-end product lines, such as the slower Pentium chips that go to lower-end PC manufacturers in Europe, he said.

Hackett said business in general should pick up to an equally rapid pace in the middle of next year, when Intel ramps up its latest chip offerings, including the Pentium II. Meanwhile, Stamford, Conn.-based Meta Group, Inc., issued an advisory to its clients May 12 to hold off on major purchases of Pentium II-based machines because of expected supply issues and pricing.

But Linley Gwennap, an analyst at "The Microprocessor Report," a newsletter in Sunnyvale, Calif., said Intel has also lost some market share to competitors such as Advanced Micro Devices, Inc. and Cyrix Corp. Both had stronger second-quarter offerings than in the recent past. Even so, Intel is still extremely healthy and should have no trouble in its longer-term strategy, he said. □

LEGISLATIVE ACTION

Business pushes for R&D tax credit

By Randy Weston

CORPORATE AMERICA is rallying to help keep the federal research and development tax credit alive.

Last week, the American Electronics Association (AEA), a Washington-based group with 3,000 high-tech company members, teamed up with 20 other associations representing 1,076 U.S. companies, to ask Congress to act quickly and permanently renew the tax credit.

The credit, which gives companies a tax break for wages and salaries paid to employees in R&D, expired May 31. The AEA and other businesses are pushing Congress to reinstate it quickly — retroactive to June 1 — so there won't be any breaks.

Jeff McMillen, the AEA's tax counsel and director of tax policy, said his organization and the other associations are trying to avoid a situation such as last year when the U.S. went without an R&D tax break for a year. The credit represents $1.7 billion annually for U.S. businesses.

The problem was that the code expired June 30, 1995, McMillen explained. An extension then got hung up in Congress for a year before a new one was passed. But instead of making it retroactive to the previous June, Congress passed an extension good only from June 1, 1996 to May 31, 1997. So companies didn't receive tax credit for June 1995 through May 1996.

The tax credit is tied to a larger tax bill now making its way through the congressional committees. □

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OPINION

'D' for Effort

IS academics, by and large, are still a bunch of underachievers.

True, there's good news from information systems ivy-land. Enrollment in computer science and IS degree programs is up, as we report in this week's series on IS education (page 92). Companies are sponsoring IS programs and internship programs, and they are endowing chairs at local colleges. Universities are updating their curriculum and launching "Techno-MBA programs."

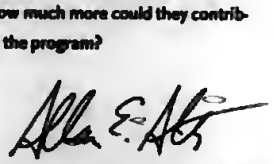
But while the outlook for teaching is improving, research and outreach is a different story.

Few college IS programs offer conferences and events for practitioners in their area. Yet the demand is clearly there: Hundreds of local IS pros are drawn to events at places such as MIT's Center for Information Systems Research, UCLA's I/S Associates and Babson College in Wellesley, Mass. Why aren't there more?

Too much academic research on IS is unusable, irrelevant and unreadable. Most professors seem content to write about jargon-filled frameworks, vague theories and marginalia rather than help solve today's nagging problems — such as SAP implementations.

Junior faculty members who produce good research are afraid to share it with the press. If they do, they may ruin their chances at publishing it in academic journals and wreck their chances at tenure. I'm haunted by an agonized conversation with one young academic who had completed an outstanding study but was afraid to share it with *Computerworld* for that very reason. The "publish or perish" tenure system actually punishes free speech.

University IS programs certainly deserve credit for attracting more students, but academia is still out of alignment with the IS mainstream. How much better could they teach, how much more could they contribute, if they got with the program?



Allan E. Alter, *Senior editor, Managing*
Internet: *allan_alter@cw.com*

LETTERS

Internet has many uses that aren't gender-oriented

IT WAS WITH disbelief that I read Elizabeth Heichler's article, "Internet lacks content for women," in the May 12 issue of *Computerworld*. The article itself is a poorly organized jumble of quotations and statistics, only a few of which have anything to do with gender.

I use the Internet daily. I read and send electronic mail several times a day. I keep up with five to 10 of the 20,000 Usenet newsgroups. I may spend a few minutes researching something on the Web or visiting a favorite puzzle site.

I use a couple of FTP clients to transfer files between my computer and various file servers around the world.

Lately, I've been using a specialized Telnet client to access a MUD that allows me to play Scrabble online against other human players.

None of these activities is inherently gender-oriented, yet I don't feel that I've been missing anything.

Susan Hoover
Houston
hoover@compuserve.com

A defense – yes, really – of America Online service

IN THE RECENT article ["E-mail flood creates logjam at America Online," CW, April 14], Zona Research, Inc. analyst Barbara Ells is quoted as saying, "This is another indication of [America Online's] network falling apart."

Also, the article states that purchasing CompuServe Corp.'s network would solve many problems, because "CompuServe has a better infrastructure and a much more scalable, Internet standards-based network." In my opinion, that is a very uninformed analysis. America Online does react to problems — E-mail or otherwise — but it never stops planning for additional capacity. What other E-mail system can handle 10 million messages a day? I can say with a great deal of confidence that CompuServe can't.

I believe most of America Online's problems have surfaced when conditions occur under loads that can never be created in a test environment.

Unsolicited E-mail causes traffic jams

It's easy to take potshots at America Online, but first consider what it has already accomplished.

Jon Arnett
Omaha
jrarnett@aol.com

Enough with glass ceilings

LEILANI ALLEN'S column, "Setting some rules for vendors' tactics," [CW, May 5] should have been titled "Setting some rules for hiring competent people."

Once again, Allen has managed to paint a victim scenario using what in my mind seems to be a case of ineffective communication and management.

Witness poor Allison, vice president of technology planning, whose problems are (gasp) "not having enough resources" and "finding out too late."

It occurs to me that anyone with that title should be able to get the resources and stay in the loop — or probably should not have the position.

I can't help but feel that Allison's glass ceiling was set a little too high.

Michael Stewart
Freehold, N.J.

Eliminating spam would relieve bandwidth crunch

JOHN GANTZ'S column ["The coming bandwidth crunch," CW, April 28] makes a point that is not only inarguable, but also obvious.

However, he didn't address some of the obvious ways to alleviate (but *not* cure) the problem. A large part of the growth in traffic is in the form of spam: bulk, unsolicited E-mail that the recipient simply discards. This usually comes with forged headers, making it difficult to get off the victim list.

A new mail protocol that would provide an unforgeable audit trail would go a long way toward alleviating that problem.

Another fix to the spam problem would be to explicitly outlaw spam and make forged headers a felony. A similar law for junk faxes seems to be working well.

Of course, such a law should require an E-mail address as the contact rather than a telephone number.

Shmuel (Seymour J.) Metz
Annandale, Va.

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65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./Retailer
95. Other_____ (Please Specify)

2. TITLE/FUNCTION (Circle one)
IS/MIS/DP MANAGEMENT
19. Chief Information Officer/Vice President/Asst. VP IS/MIS/DP Management
21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr
12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❒ Yes ❒ No
Networking Products ❒ Yes ❒ No
Internet Products ❒ Yes ❒ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ❒ Internet software
(b) ❒ Internet browsers
(c) ❒ Web authoring/development tools

5. Do you use the Internet? ❒ Yes ❒ No

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40. Wholesale/Retail/Trade
50. Business Service (except DP)
60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./Retailer
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(b) ❒ Internet browsers
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5. Do you use the Internet? ❒ Yes ❒ No

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Postal Service's technology budget misdelivers

Gary H. Anthes

"We lose money on every item we sell," the old joke goes, "but we make it up on volume."

The U.S. Postal Service, which is expected to finish next year $1.4 billion in the red, recently outlined to Congress a strategy for growth, both in its traditional snail mail markets and in new products such as E-mail and encrypted digital postmarks.

Pounded by competition from E-mail, faxes, electronic data transfers and delivery services such as FedEx, the Postal Service is running scared. From 1988 to 1994, it lost $6 billion in revenue to competitors.

It sees electronic services as one way to regain lost business. "Growth is what sustains our network," Postmaster General Marvin Runyon told a House committee.

The Postal Service could end up with money-losing deliveries to places such as Ted Kaczynski's cabin.

Runyon asserted the growth mandate as a kind of self-evident truth, like it had come right out of the U.S. Constitution. But why *should* the Postal Service grow? Why *should* it care about market share? The quasi-federal agency isn't a Fortune 500 company with obligations to shareholders.

The answer, it says, is that it must protect its revenue base in order to fulfill a legal mandate to offer universal service at a low, uniform rate. For 32 cents, a brave postal person on a mule will carry your first-class letter to the bottom of the Grand Canyon. If private carriers such as MCI, America Online and FedEx skim off the revenue cream, the argument goes, the Postal Service will end up with the money-losing deliveries to places such as the Grand Canyon and Ted Kaczynski's cabin.

But in truth, the Postal Service's biggest financial problem — and its greatest technological opportunity — is on the cost side of the ledger. Last year, operating expenses rose 4.7% while revenue gained just 3.9%.

Despite multibillion-dollar expenditures on automation stretching back 15 years, labor still takes 80 cents of every dollar spent on postal operations. A mere 1% reduction in labor costs, which are expected to rise 6% this year, would add more than $400 million to the Postal Service's bottom line.

Assuming a very ambitious profit margin of 10% on those new electronic services, the services would have to generate revenue of at least $4 billion to have the same impact as labor cost reductions. That isn't likely any time soon.

In any case, the ability of the $56 billion postal gorilla to outmaneuver the nimble and aggressive technology sector is highly doubtful. The Postal Service's E-mail service, E-com, flopped in the early 1980s when it couldn't be priced low enough to attract customers. And its Postal Buddy electronic kiosk was unplugged in 1993 after less than a year of service.

The Postal Service plans to invest $3.6 billion through 2001 in labor-saving technology improvements such as high-speed sorting and bar-coding equipment. That's just where its techno-dollars should go, not into the kind of electronic services that can be provided so ably by the private sector.

"Revenue growth and cost control are essential," Runyon told the House committee. He had it half right. □

Anthes is Computerworld's senior editor, special reports. His Internet address is gary_anthes@cw.com.

Anonymous E-mail fans flames of corporate conflict

Michael Schrage

PC Corp. (not its real name) had a problem with anonymity that was driving top managers crazy. A rogue piece of software appeared on the network that let employees send anonymous E-mail messages. There was a rash of sexually suggestive — and even obscene — E-mail sent to female employees.

Unpopular managers received insulting E-mail appraisals of their personal style and professional performance.

More ominously, several messages detailed serious problems with PC Corp.'s key projects. Like kerosene poured on a smoldering fire, these anonymous acts ignited once-covert resentments and turned them into openly burning issues. While half the company was thrilled that anonymity raised these problems for corporatewide discussion, the other half was furious that the leakers couldn't be found and punished.

Ultimately, PC Corp.'s top managers pulled the plug on its global E-mail system, rewrote its network software to assure that all messages could be tracked and issued edicts that forbade anonymity on the intranet. The traffic that now flows on PC Corp.'s net is excruciatingly polite.

This example is hardly fictitious; it's an unhappy composite of real-world confrontations that have occurred at several Fortune 1,000 companies.

More than any other E-mail issue, anonymity provokes heated debate. The "right" to E-mail anonymity strikes at the very heart of values that organizations either cherish or try to suppress. Some organizations see anonymity as a healthy, essential part of their internal dialogue, a mechanism that promotes free and unfettered comment. Others see it as a sleazy software mask that lets mischief-makers and malcontents get away with taking cheap shots at people who have the guts to sign their names to their messages.

At a giant aerospace manufacturer in the Northwest, for example, managers are grateful that their brainstorming software encourages anonymous contributions. "If we had to attach our names to our suggestions, I think people would be less forthcoming," insists one engineer there who, yes, asked not to be identified. The culture of the company, he argues, makes it difficult for younger engineers to publicly make comments critical of senior engineering decisions. The fact that anonymity effectively subsidizes the existing culture rather than encouraging a more open and honest exchange of ideas is dismissed as politically unrealistic.

The issue becomes even more intense when one considers the speed at which organizations are linking their E-mail networks in hopes of creating virtual corporations and accelerating the flow of vital data.

E-mail anonymity strikes at the very heart of corporate values.

Companies are hooking up E-mail networks with key customers and suppliers. Suppose a customer permits and even encourages anonymous messages, while its supplier forbids them. When these two companies collaborate on a project, whose E-mail protocol should win?

Ironically, the ability to E-mail may lead more to a hostile clash of values than to the desired goal of better communications. Privacy is relative; anonymity is an absolute.

Market forces have created innovations for anonymity. Remailers can "launder" messages in ways that completely obliterate their origins. Although companies can use remailers to send anonymous messages, there are no known Fortune 500 companies that provide such remailers internally.

What would improve open and honest communications in your organization? Anonymity or attribution? Ummm, how do you know? □

Schrage is a research associate at the MIT Media Lab and author of No More Teams! *His Internet address is schrage@media.mit.edu.*

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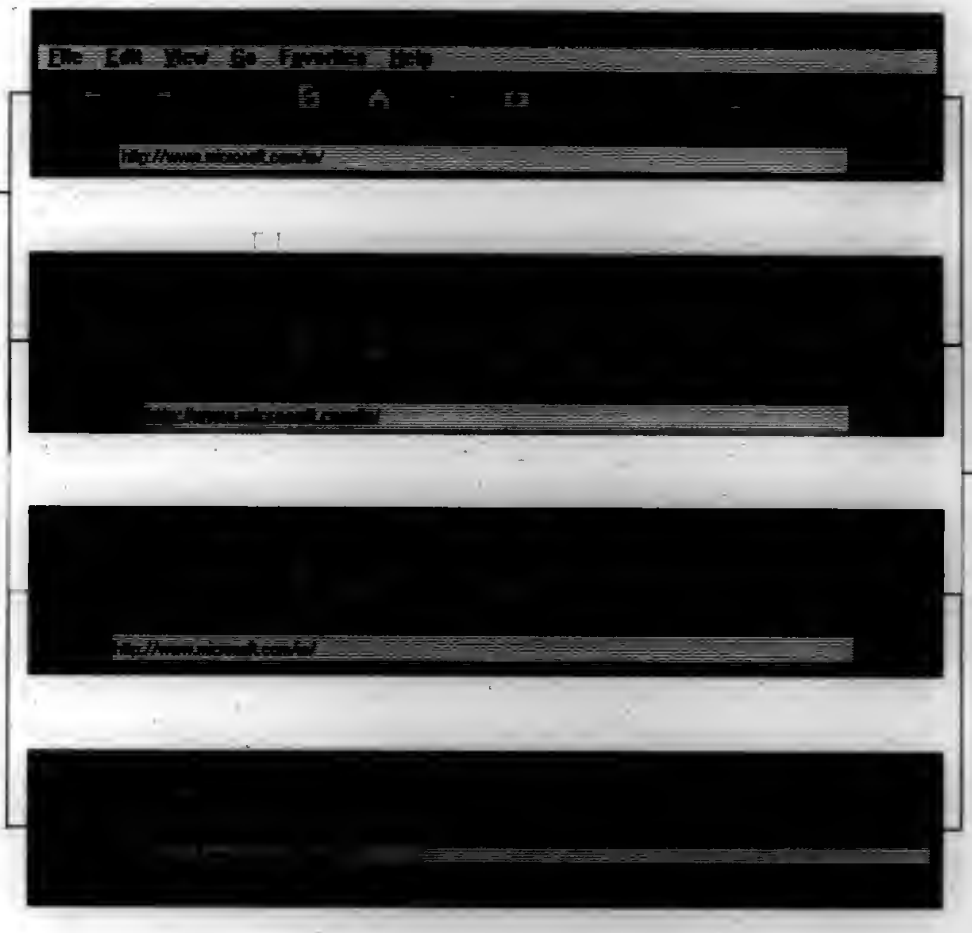

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COMMENTARY

Cisco's dangerous liaison

DAVID MOSCHELLA

IN AN INDUSTRY of a thousand alliances, few are as important or intriguing as those between Microsoft and Cisco. So far this year, the two giants have announced four major joint initiatives: directory services, virtual private networks, network security and network multimedia. Their relationship has clearly become serious.

It's easy to understand why each might find the other attractive. As networking becomes a fundamental aspect of virtually all computing, Microsoft's work on Windows NT and Cisco's development of its Internetworking Operating System (IOS) have inevitably begun to overlap.

Rather than let others thrive off any friction, the two giants have decided to seek prosperity together. They hope to set clear standards, accelerate industry growth and distance themselves from the competition. Given the big investments many customers have with both companies, it's hard to argue with these aims.

But even though a major partnership with Microsoft is almost always tempting, I can think of two big reasons — hardware and software — why Cisco should seriously consider scaling back an entanglement it may soon regret.

In terms of hardware, is there any doubt that Microsoft will try to transform the data-communications equipment industry into a commodity business? Just as MS-DOS runs on many PCs and Windows NT on many servers, Microsoft will want its network software to run on as many hardware platforms as possible. Cisco is, of course, predominantly a high-margin hardware vendor.

Cisco might hope to work with Microsoft in the same way Intel does. But the reality is that in the fast-changing data communications market, Compaq is a more accurate analogy. Cisco should never forget that Microsoft didn't create Intel's monopoly, and Bill Gates was perfectly happy to have his software run on Digital's Alpha, Mips Technologies' chips or the PowerPC. Similarly, Microsoft has little stake in preserving Cisco's position.

It's in software where the real risks emerge. Today, Cisco and Microsoft stress how complementary their offerings are. They point out that once products are delivered, customers will be able to link Microsoft's Active Directory to Cisco's IOS to manage their networks more easily. So far, so good.

But consider what will happen next. As Microsoft adds directory services, security, bandwidth allocation and network management to NT, its need for Cisco's software will shrink. Remember, there was a time when the market saw DOS and Novell's NetWare as complementary. Then NT came along, and suddenly NetWare became the enemy.

In short, Microsoft's systems software ambitions know no bounds, and it would be dangerous for Cisco to believe otherwise. All evidence suggests that Microsoft's long-term strategy is to reduce IT hardware to commodity status, while simultaneously crushing any would-be system software competitors. How can Cisco partner with that?

In the end, Intel can work with Microsoft because one makes hardware and the other software. Cisco happens to make both, and in software, it is on a collision course with Microsoft. By working closely with Redmond today, Cisco is only strengthening the hand it will be fighting against tomorrow. □

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is david_moschella@cw.com.

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Whether customer or vendor, global support
– especially software – is a tough haul

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the "yippeee... we're on the Internet! now what?" solution

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Global Net Knits East to West at Liz Claiborne

APPAREL GIANT LINKS U.S. DESIGNERS WITH MILLS IN HONG KONG

What do you do if your Manhattan model can't fit into a factory sample garment that just came in from Hong Kong? If you're Liz Claiborne, Inc., a $2 billion apparel and accessories giant based in the U.S., information technology has a lot to do with the answer.

Three years ago, North Bergen, N.J.-based Liz Claiborne faced a problem similar to that confronting other U.S. garment makers. Designs originate in the U.S., but production is often farmed out overseas. Keeping tabs on product timing and quality is a challenge when contract mills and factories are a dozen or so time zones away. And trimming cycle times is a must, both to cut down excess inventory and to have more time to concentrate on new fashions.

Liz Claiborne was also facing declining profits. According to company officials, the company had stagnated, both in design work and business practices. Inventories were high, and the time was ripe for a top-down change. The result: LizFirst, a project intended to transform the company into one that's first in responsiveness, service and total value. A critical piece of that project was an investment in IT, according to John Thompson, Liz Claiborne's chief information officer.

The major goals of LizFirst were to reduce excess inventory by 50%, reduce cycle time in major business processes by 25%, increase responsiveness to customers and improve timeliness and accuracy in shipments.

Two years into the project, the company is about 70% of the way toward its goal of slashing $100 million in operating costs. It is also meeting cycle time reductions in most of its business processes, Thompson said. The savings have come primarily from payroll management, renegotiated freight agreements, facilities management and licensed divisions.

A key component of LizFirst was to streamline textile production and develop garment patterns and specifications in a standard format. Before the project, a great deal of the design process was manual, according to Kathryn Shipman,

view

TRENDS, ISSUES AND IDEAS FROM AROUND THE GLOBE

director of corporate computer-aided design (CAD). But time is of the essence: Because most of Liz Claiborne's divisions create fashion lines four seasons a year, they must work in three-month time periods. "There are many processes that are being broken down into shorter cycles, so we have more time to research better designs," Shipman said. "We are reallocating our time."

Today, a global network knits together designers on the East Coast with manufacturing representatives in the Far East. For textile design, Liz Claiborne standardized on U4ia from Computer Design, Inc. in Grand Rapids, Mich., as its CAD package, Shipman said. The software was installed in all its divisions last year.

CAD images are shipped to manufacturing offices in Asia over an ISDN connection, through a pilot project with DuPont ESnet, a subsidiary of DuPont Co. Several ISDN lines are combined to offer speeds of up to 448K bit/sec., Shipman said. Where ISDN service is not available, the images are sent over analog lines at rates up to 90K bit/sec., she said.

For the pilot, local Liz Claiborne staffers bring tape copies of the CAD files to factories that use CAD or print them out for factories that don't. Ultimately, Liz Claiborne would like to see the images delivered to the mills, Shipman said.

MAKING IT FIT

Liz Claiborne also uses the DuPont ESnet service to facilitate "fit sessions," during which a live model tries on a factory garment. Before, if a sample from Hong Kong was too big on a model in Manhattan, designers had to write out detailed instructions describing which alterations to make. Now, Shipman said, designers can snap a digital photo of the garment, annotate it in U4ia and then, using DuPont ESnet's Image Link software, send the image to the manufacturing office. They can also shoot a video clip to show a tricky alteration.

To standardize pattern specs, Liz Claiborne has begun rolling out Style Manager by Animated Images, Inc. in Camden, Maine. This software combines a vector-based drawing package with an Oracle Corp. database for storing pattern designs and specifications. All information needed to produce a particular style, such as color and fabric, starts in Style Manager.

Now, under a pilot that began early last year in two of the nine apparel divisions, manufacturing reps, design liaisons and the mills in Asia can access the files stored on a Hewlett-Packard Co. HP 9000 server in New Jersey via their desktop PCs, using a frame-relay service offered by Infonet Services Corp. These staffers work with manufacturing and product development staffers in the U.S. to ensure Liz Claiborne gets the quality it needs from its contracted factories in the region.

"As we implement Style Manager, they will have access to that data any time they need it," said Tim Loftus, data communications manager at Liz Claiborne. "They won't have to wait for an E-mail, which can take a long time, especially with the time difference."

Liz Claiborne also uses Infonet's frame-relay service, a recent major upgrade of its connectivity in the region, for applications such as electronic mail and faxing, Loftus said.

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EDWARD SANTALONE

Latin America Gets Caught Up in 'net

STARMEDIA AIMS FRESH CONTENT AT LATIN AMERICAN INTERNET FANS

When Jack Chen suggested launching an Internet content service in China last fall, partner Fernando Espuelas replied, "Un momento, por favor." Why not Latin America?

After all, it's relatively homogeneous in culture and language. It's also increasingly bonded by PC usage among an upscale market, and it's a place where a single site, if positioned correctly, could cross national borders as easily as the telephone links on which the service would be carried. Furthermore, consumers and government leaders throughout Latin America are starting to embrace information technology and the Internet, Chen said. In 1996, the Internet population there grew to 2 million users.

"Latin Americans are notoriously enthusiastic consumers of technology," Chen said. "Fernando convinced me the growth down there was at least as good if not better than Asia."

Latin America is also vastly underserved by Internet content, as are many non-English-speaking regions. Today, the Internet is at least 95% English language, making it ripe for language-specific content development, he said.

And that's exactly what Chen and Espuelas's service — StarMedia — is all about. The two launched the service in January, styling it after a commercial online service such as America Online but without the network infrastructure, meaning that users need their own Internet service provider (ISP) connections. Since that time, StarMedia has built its user base and hit counts to more than 1 million per month, said Espuelas, who serves as chairman and chief executive officer.

Since January, the company has hired 10 employees, including field sales representatives in Brazil, Argentina, Colombia and New York, and contracted with Cambridge, Mass.-based BBN Planet to host its site, providing for fast and secure connections. "We can add value on the content side — specifically, content that builds a community where people can be a part of something," Chen said.

Today, that content includes chat rooms; bulletin boards; a financial information system in Spanish and Portuguese; a new "Imail" electronic-mail system that sends images and post cards; and a channel titled "Yo quiero" (I want it), which solicits suggestions. Users need an ISP connection and at least 2.0 versions of either Microsoft Corp.'s Internet Explorer or Netscape Communications Corp.'s Netscape Navigator to access the site.

Most important, the content

Latin America IS VASTLY UNDERSERVED BY INTERNET CONTENT, AS ARE MANY NON-ENGLISH-SPEAKING REGIONS. TODAY, THE INTERNET IS AT LEAST 95% ENGLISH LANGUAGE.

is fresh — not regurgitated from other sources. "We're not duplicating something that happened in the U.S. six months ago and saying Latin America can have the bad cousin," Espuelas said.

At first, the network will target the upscale population and develop specific content for the region's leading markets, including Brazil, Mexico, Argentina, Colombia and Chile. This amounts to some 15% of the 450 million people in the region, said Jose Chao, former publisher of e3, a Spanish-language consumer electronics magazine.

The growth potential looks promising, Chao said. Good signs include an emerging home computer market and investment in telecommunications, which has resulted in the installation of fiber-optic telephone lines in upscale neighborhoods and business districts. This should help StarMedia gain acceptance and consumer usage in the region, Chao said. ISP subscription fees are also on the decline, dropping from nearly $300 to $30 a month in Mexico City, Espuelas said. "That sort of price degradation is very good for us, obviously," Chen added.

BUMPS IN THE ROAD

The launch has not been without problems. The coropany has experienced 1,000% growth during the past four months, Chen said, so meeting capacity remains a challenge. Keeping up with traffic and being able to hire talented and bilingual staffers to create the site was offset in part by basing the company in Greenwich, Conn., where both principals were raised.

And although most urban centers have reliable ISP service that approaches U.S. levels, the market is fragmented with many smaller players, and reliable service can vary by vendor. Further, though telecommunications capacity is growing throughout Latin America, "it's still more difficult to get additional phone lines [there] than it is in the U.S.," Chen said.

Chen would not speculate on future expansion beyond Latin America — even China — instead saying the company will focus on refining its first network. China itself presents plenty of obstacles. In addition to the government itself, there are also low PC penetration and language barriers to worry about.

But the potential upside is promising. Being among the first in the market with such a service, StarMedia has captured the "first mover advantage" to lead content and site direction in Latin America, Espuelas said. The next challenge is to continue developing new content channels and to lure advertisers online. The site's business model depends in part on advertising revenue. So far, two advertisers are booked: Canal Fox and MindQ, a U.S.-based educational software development company.

Whatever happens, Espuelas said, he sees the Internet as a great opportunity waiting to happen for content providers. "It's the only way a true community can take shape, to be open and free and equally accessible by everyone. We think there's enormous opportunities for developing markets," Espuelas said.

ZBAR IS A FREELANCE WRITER IN CORAL SPRINGS, FLA.

THE SUPPORT BURDEN

Software Support: Who Carries Whom?

RECEIVING IT

BY KATHLEEN GOW

As a global company, you probably have little trouble persuading vendors to sell you software licenses for even the most far-flung outposts of your company. But will those same vendors support all those locations? And with what level of quality?

Although the leading software vendors have done a good job gaining a larger percentage of international business, they are still wrestling with just how to provide better global support. The job today is falling mostly into the hands of a central information technology staff, which needs to stitch together a patchwork strategy, depending on the suppliers, software and locations involved. "Sometimes an IS department assumes responsibility, sometimes a company will make support part of [a purchase agreement] for a large, mission-critical application. In some cases they outsource, and in others they just stick their heads in the sand," said Carter Lusher, vice president and research director for customer service and support strategies at Gartner Group, Inc. in San Jose, Calif.

One company that's definitely got its head above-sand is British-American Tobacco Co. According to Agnes Mak, Hong Kong-based management services manager at the company, taking into account the support requirements of local operations is one of the biggest challenges information systems teams face when putting together standardized, companywide systems. "You need to check whether that vendor has sufficient support available for local operations," said Mak, who has 18 years' experience working in multinational companies around the world.

IBM, for instance, gives an international volume-purchase discount to the head office of a company, which allows its regional operations to purchase their [systems] locally. "That means the local IBM office is winning some business

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Scoring a multinational contract is cause for celebration. But too many firms would rather sweep the after-sales issue under the rug: how to support customers in dozens of locations worldwide. And on the buying end, how do you ensure your software vendor can do the same? Especially as global firms standardize on worldwide systems, they must ensure consistent software support. We explore both sides of the issue below.

PROVIDING IT

BY TOM DUFFY

Anytime, Anywhere — Noway, Nohow

When a $7 billion U.S.-based consumer products company needed to build a call center in Europe to handle its customers in Western Europe, Switzerland seemed a natural choice. Because both French and German dialects are spoken there, company officials reasoned it would be easier to staff the 300-person center with speakers of the major European languages.

"The problem was that the Parisians are very sensitive to accents, and they didn't appreciate some Swiss French speaker giving them service," said Carter Lusher, research director for customer service and support strategies at Gartner Group, Inc. in San Jose, Calif. So the firm had to build a second, smaller call center on the outskirts of Paris.

The story, Lusher and other analysts said, perfectly illustrates the double-edged problem global firms face when providing customer service across international boundaries. In order to provide more consistent service as well as cut costs, more and more companies feel compelled to consolidate their call center operations in a handful of locations. Yet such regional solutions may fail to account for local cultural differences that play a critical role in determining how firms should treat their customers.

Plus, some vendors still struggle with how to account for revenue in this support model, said Chris Hjelm, vice president of worldwide revenue and clearance systems at Federal Express Corp. "If I do an enterprise sale out of the U.S., then the U.S. team will get credit for that sale. If they're not allocating that revenue worldwide, then other sites tend not to be as responsive," he said.

Such problems don't crop up solely around questions of call center management. Self-help sites based on the World Wide Web can give remote customers access to critical product data and software patches. But few of these

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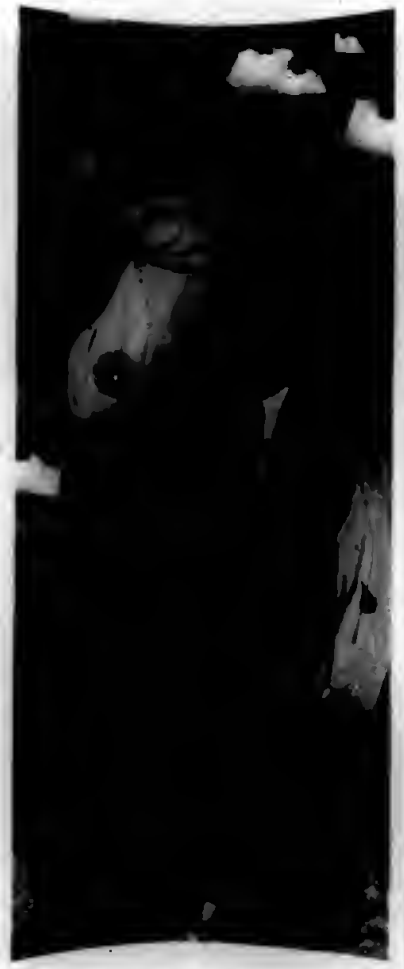

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solution

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Providing the Right Support

Continued from page 9

have yet to be offered in multiple languages, and those that have face difficult translation issues, according to Lusher. It might be OK to use command-oriented language in dialog boxes in English-speaking countries. But the same might not be true in Japan, where language use is more formalized.

WHAT TO WATCH OUT FOR

There are other pitfalls. In some regions, for instance, high tariffs make inventory costs prohibitive, limiting availability of parts, according to Kurt Johnson, an analyst at Meta Group, Inc. in Waltham, Mass.

Currency differences and telecom regulation also coto-plicate global support. In the U.S., customers of Symantec Corp., a U.S.-based PC software vendor, either call a 900 number or pay for phone service with a credit card. But when several countries are involved, the telecom billing structure gets much more complicated — so complicated that Symantec's Amsterdam-based call center, which services all of Europe, has no choice but to give away phone support to its customers.

If a support representative in the Netherlands were to take a call from Germany, for instance, it would be difficult to bill that person in marks using the Netherlands' credit-card processing networks or to figure out how to work with the caller's long-distance provider in Germany to receive payment for pay-per-minute calls. Secondly, on a telecom level, each country has regulations on how much to charge for calls, so deciding on a per-minute price for the calls would be very difficult.

Thirdly, Europeans aren't keen on using their credit cards over the phone for the credit-card billing option. In addition, Symantec would have to accept payment in guilders, which would involve fluctuating currency exchange rates, and people don't like that, said Arthur Velasquez, product support manager for Europe, the Middle East and Africa. Despite such obstacles, Velasquez hopes to have these issues ironed out by year's end.

In spite of all the challenges, global firms press forward with sophisticated attempts to provide consistent service across international boundaries. Call center consolidation is perhaps the most obvious trend. Thomas Cook Group Ltd., a London-based financial and travel services company that supplies 30% of the world's travelers checks outside of the U.S., recently consolidated its call centers into a single 240-person one in Peterborough, England. The Global Refund Center serves customers worldwide and operates in 24 languages as diverse as Japanese, Arabic and Thai.

ABB ASEA BROWN BOVERI LTD.

ABB IS MOVING TO Notes 4.5 so customers will be able to access support applications through browsers. "Customers appreciate it when you can be as flexible as possible."
WOLFGANG VOGT, ABB product manager for Lotus Notes

Most Thomas Cook operators are trained to recognize the language being spoken and pass the call along to the appropriate operator, said Tony Ackroyd, the refund center manager. Call details are entered into an Object Design, Inc. database, which the operator can query for details of the original purchase. In the few instances when a caller speaks an unsupported language, such as an African language, Thomas Cook pays to use an AT&T three-way call, with simultaneous interpretation service.

While companies such as Thomas Cook are shutting down call centers, others are improving the ability of diverse centers to share as much data as possible. Hewlett-Packard Co. is replacing its 10-year-old knowledge-sharing system, which links 34 call centers in 31 countries, with an intranet-based system known as K-Mine. The system serves thousands of HP response center engineers as well as third-party engineers and individual customers, who access it via Netscape Communications Corp. browsers.

The system is based on a Sybase, Inc. database running on HP Unix servers, according to Paul Primmer, support technology lab manager for HP's worldwide customer support operations in Roseville, Calif. Three redundant systems exist in Singapore, Brussels and Atlanta, with the information shared via a Sybase replication engine.

The new system houses documentation on more than 20,000 parts and products, with detailed diagrams available on about 30% of those parts. It also stores thousands of "solution" documents entered by call center personnel from around the world detailing specific fixes, as well as user notes that field personnel submit in real time via the Web. The system also allows the storage of voice and video.

"The vision is to make knowledge available anytime, anywhere, anyway," Primmer said. "Anytime means that it's available 24-

by-7 worldwide. It has to be redundant and accessible, even when people are backing it up." To that end, HP runs its own backup utility called Omni Back during off-hours at each of the three locations.

This type of knowledge-sharing system is essential to providing strong global customer service, particularly in remote areas. ABB Asea Brown Boveri Ltd., an engineering/construction conglomerate in Zurich, uses a Lotus Notes-based system extensively to support its customers (see story page 8).

When ABB goes into a grassy field somewhere in the Asia-Pacific to set up a power plant, for example, one of the first things it does is set up a mobile field office. The unit can house PCs, a LAN and a Notes problem tracking system, which communicates to the regional hub via satellite.

This system helps the ABB engineers communicate via phone, fax, E-mail and Notes with the regional support center during site construction. But once construction is over and telecom lines are set up, the LAN and the Notes software get moved inside a regular office in the plant, and the problem resolution application is turned over to the customer. At this point, the customer uses Notes to contact ABB for ongoing support.

At the moment, ABB customers need Notes clients to use the company's customer-support applications. But ABB is moving to Notes 4.5, which incorporates the Domino server capabilities, so customers will be able to access the support applications through browsers.

"Customers appreciate it when you can be as flexible as possible," said Wolfgang Vogt, ABB product manager for Notes.

Part of the challenge of unified customer service is that most companies start out domestically and reach global stature only over a period of years. That almost guarantees that the goal of perfectly homogeneous customer service will remain an elusive Holy Grail.

"Most companies didn't grow up as global organizations," Meta Group's Johnson said. "Now they are trying to retrofit a global front end on top of everything."

PACKARD CO.

HP IS REPLACING ITS 10-year-old customer service system with an intranet-based one that links 34 call centers in 31 countries. "The vision is to make knowledge available anytime, anywhere, anyway."
PAUL PRIMMER, support technology lab manager for worldwide customer support operations

TSW International, Inc. in the U.S., for instance, has begun to make the Web an integral part of its customer service operations. With 904 worldwide customers and call centers in Singapore, Australia, Paris, London and Atlanta, the $50 million maker of asset tracking software recently completed a two-year makeover of its customer service approach, with the goal of increasing efficiency and allowing greater interactivity with users.

"If the customers come to us electronically, we have found those questions are logged in much more detail than an initial phone call," said Michael T. Nugent, TSW's vice president of worldwide customer service.

The Web-based system, known as Care Net, comprises several customer service modules from Vantive Corp. in Santa Clara, Calif. The applications handle customer support, sales and marketing and a help desk feature, which TSW will be implementing in the next few months.

Customers connect to TSW's home page, housed on HP Unix servers at its Atlanta offices, via the Internet. Once connected to the Vantive applications, they can perform queries ranging from problems with software to questions on new installations. Queries are entered into an Oracle Corp. database, where they are scanned by the Vantive system, which ships a workflow record to the appropriate call center. TSW's call center staffers, running Vantive clients on their desktop, can either reply electronically or call the customer directly.

"A few years ago, we had oo one method of communicating with our customers from a database perspective, and we had no way of routing work between full service centers around the world," Nugent said.

The system so far is primarily English language. However, a few pages are available in Spanish. The goal is to eventually have the site be trilingual: English, Spanish and French.

Which just goes to show that as companies and their customers continue to go global, they will continue to live in an imperfect world. "You will always find pockets of inconsistency," Johnson said.

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Receiving the Right Support

Continued from page 8

and [has the incentive] to provide high levels of support locally," Mak said.

Chris Hjelm at Federal Express Corp. agrees this is important. The U.S.-based IT team at the Memphis-based international express mail carrier provides a good deal of support in-house for its globally used Sybase, Inc. database, and it is working to develop and hire expertise in other regions of the world. But it relies on the local Sybase offices for support on an as-needed basis.

"Slower IT growth markets, like Eastern Europe and Latin America, frequently don't have a vendor presence except on a contracted basis," said Hjelm, vice president of worldwide revenue and clearance systems at FedEx. The problem, he said, is that Sybase and other large vendors such as IBM and Hewlett-Packard Co. will in some cases contract out to local providers that are not as responsive because they don't receive revenue credit for the support they provide.

You can address most of those problems by working with your vendors and making sure they understand the implications up front, Hjelm said. For instance, FedEx will sometimes ask to meet with vendors "so they can build a relationship with their regional counterparts and see what issues we're up against," he said.

Another way for subsidiaries to prevent unpleasant surprises in service quality from local resellers is to insist on an audit of the support operation, said Neil Hawthorne, product manager for the Australian operations of J. D. Edwards & Co., a U.S.-based supplier of enterprisewide business applications. "Get them to show you their statistics for resolving problems within [so many hours]. Find out what percentage is resolved locally and what percentage is sent overseas," he said.

Great audit results don't mean you can sit back and relax, though, cautioned Erik Keller, vice president and director of research at Stamford, Conn.-based Gartner Group, Inc. Service and support is very fluid because it's made up of people, and people are mobile. "A great office now might be gone in six to 12 months," he said.

THE OUTSOURCING OPTION

One company that has chosen, by necessity, to outsource support of its enterprise resource planning application is Swiss chocolate maker Lindt & Sprüngli. The company is upgrading its headquarters office from SAP AG's R/2 to the R/3 client/server version and has enlisted the services of local consulting firm IMG Consultants, said Lindt spokesman Marcel Ebner. The consultants make extensive use of SAP's software support service, both telephone and online, and queries are typically answered within 15 minutes.

Even with this kind of response, Ebner said, the support picture could be improved by increasing the number of experienced SAP people on the job. The problem is finding them. Around the world, SAP relies on local contractors for implementation and support. Whereas the supply of SAP consultants in the U.S. is now about even with demand, according to industry recruiters, in Switzerland it is still very difficult "to find the right person with the right experience," Ebner said.

A weekend ad in a German newspaper for experienced SAP engineers familiar with the sales and distribution modules yielded only five responses. Lindt & Sprüngli has not yet decided whether it will roll out R/3 in its offices in the rest of Europe and elsewhere.

ZENECA STANDARDIZED on Microsoft for its 15,000 PCs worldwide. However, with operations in more than 100 countries, it had a hard time finding a company capable of supplying software and support on a global basis.
IAN PETTIGREW, head of IT purchasing

LTD.

STREAMLINED STRATEGY

Neighbor ABB Asea Brown Boveri Ltd., based in Zurich, addresses the support challenge by providing its approximately 70,000 worldwide users of Lotus Development Corp.'s Notes with a tiered system that includes Notes. The industrial giant has servers around the world that tie into ABB's five main technical support centers, which act as a clearinghouse for support issues and as liaisons with Lotus.

When support staffers at ABB's local subsidiaries can't handle a Notes question, they use Notes to contact one of the technical hubs in Vasteras, Sweden; Mannheim, Germany; Zurich; Singapore; and Windsor, Conn. If personnel in the hubs can't answer the question, they escalate the problem to the next level — Lotus itself.

In Europe, ABB mainly uses Lotus' "Support via Wire" service, a Notes help-

desk-type application. In other areas, they contact Lotus by electronic mail or phone.

By reducing the points of contact with Lotus down to the five hubs, ABB has tried to keep communications streamlined. "We do it for efficiency," said Wolfgang Vogt, ABB product manager for Notes. He added that it helps prevent different businesses around the world from calling Lotus about the same problems. In fact, there aren't too many vendors in the world that can handle support of ABB's basic data and communications applications and infrastructure on a worldwide basis.

"You have to look at which outsourcers have a mature enough infrastructure m offer support on a worldwide basis," he said.

Another model that has been gaining acceptance in North America during the past several years is to outsource global support to one or more third-party distributors, said Tom Sweeny, director and principal analyst for software services at Dataquest, Inc. in Westboro, Mass. The user company may still negotiate its software license with the software vendor directly but then hand over the global contract to a third-party supplier. The supplier acts as middleman between the software vendor and the user, often providing distribution, support and invoicing. This gives the user a large discount, simplifies administration of licenses and keeps local users happy.

This is how American Home Products Corp. in Madison, N.J., handles global support for both Novell, Inc. NetWare and Microsoft Corp. Office applications in the 145 countries in which it operates. American Home Products, a pharmaceutical and agricultural products company, negotiated the agreements directly with the vendors for both purchasing and maintenance, but fulfillment of the agreement is handled exclusively by Philadelpbia-based Softmart, Inc., an international supplier of software and services.

Americati Home Products prefers this method of handling support, said Joe Vil-

FEDEX MEETS WITH its biggest software vendors throughout the world "so they can build a relationship with their regional counterparts."
CHRIS HJELM, vice president of worldwide revenue and clearance systems

FEDERAL EXPRESS CORP.

lano, director of corporate technologies, "because there are so many different vendors you end up having to deal with. The administrative burden is that much easier."

SUPPORT FOR 100 COUNTRIES

Increasingly, this model is being adopted in European markets as well. Soon after its spin-off from Imperial Chemical Industries PLC in 1993, London-based Zeneca Ltd. decided to standardize on Microsoft desktop applications for its approximately 15,000 PCs worldwide. This standardization would not only simplify communications among divisions but also allow Zeneca m strike a better deal, said Ian Pettigrew, head of IT purchasing at the pharmaceutical and agrochemical firm.

Microsoft offered the company "a complex but attractive deal" called a Global Enterprise Agreement, Pettigrew said, whereby Zeneca would work through a single third-party supplier in exchange for a quantity discount. With Zeneca operating in over 100 countries, though, there were few companies capable of supplying software and support on a global basis, he said. He eventually chose London-based ICL, a member of the Fujitsu group of companies, to act as the third-party supplier of Microsoft's Office Professional suite and Back Office.

Zeneca's only concern over the service capability of ICL, which operates in more than 80 countries, lay in the U.S., where the international IT systems and services company eventually partnered with ASAP Software Express, Inc., a Buffalo Grove, Ill.-based distributor. Under the agreement, ICL handles software distribution and support, invoicing and collection locally with each of the companies. Microsoft delivers software upgrades in CD-ROM format to ICL every 45 days, which ensures that each of Zeneca's participating companies receives them. Additionally, ICL sends a monthly report to Zeneca headquarters with an up-to-date picture of who is using what.

For group IS manager Derek Newman, there are multiple benefits: In addition to the substantial purchase savings, "It also means we don't have to deal with a whole raft of suppliers. Because we are getting statistics back from ICL, we have a good picture of what is happening around the world, and we get a standardized approach."

Zeneca units are allowed to decide when and how they will adopt the standard Microsoft product set, although a sliding discount encourages a wholesale change sooner rather than later.

Another potential benefit of handling support in this manner, Dataquest's Sweeny suggested, is that customers may actually get more comprehensive support. "By leveraging their economies of scale and making investments in multiple vendors' product, the direct service providers have built a highly skilled work force that is in many cases as proficient as the vendors in

Please turn to next page

Receiving the Right Support

Continued from page 15

supporting specific technologies and perhaps more proficient when it comes to supporting multiple technologies."

Across the enterprise, the most common response to global software support still seems to be a hybrid strategy based on the type of software, the needs of the company and the maturity of geographic markets.

"What's needed to support desktop products like Microsoft Office, for instance, is considerably simpler than what's needed to support [enterprise resource planning] applications such as SAP or Oracle that have been heavily customized," Gartner's Lusher said. "There is no particular trend," he added, "because there is no perfect method."

The Benetton Group, run out of a castle near Venice in Ponzano, Italy, uses just such a hybrid strategy. A mix of locally supported office applications and business management applications, maintained centrally and combined with a worldwide data network outsourced to General Electric Information Services Co., has allowed Benetton executives to build the company into the envy of apparel retailers across the globe.

Tying headquarters to its Italian plants and offices in 31 countries is a custom-developed, client/server business management system that offers purchase order, inventory and client information exchange. The clothing franchise supports this mission-critical application centrally with a hot line manned by only three people, according to Bruno Zuccaro, vice president of IS. Because the hot line operates from 8 a.m. to 7 p.m., local Italian time, time-zone differences occasionally present a problem for Benetton's dispersed offices around the world, he conceded. All office and accounting applications are supported locally, though, by whomever the local affiliates choose: vendor, value-added reseller or consultant.

Keeping accounting applications local is important, Zuccaro said, because accounting regulations differ from country to country. In the world of the virtual corporation, the more administration and support that can be off-loaded from central headquarters, the better, he said. "The local offices know which suppliers offer good service, so we leave it up to them."

CUSTOMER SERVICE TIPS

- CONSULT A TASK FORCE from IT divisions around the world before selecting global software standards.
- CHOOSE MARKET-LEADING vendors with a worldwide presence.
- CHOOSE SUPPLIERS with a variety of support channels, including Internet sites and virtual hot lines that can be routed around the world.
- ASK LOCAL VENDOR reps or third-party partners for an audit of their support operation, including response time for problem resolution.
- ENSURE THE LEVEL of support you'll get is as high as you're promising customers.
- IF YOU PLAN ON ADDING your own global "enhancements" to packaged software, first ensure your vendor can support it.
- FOR PARTICULARLY challenging support locations, have your software vendor or supplier meet you there to establish relationships with local providers and see what you're up against.
- PROACTIVELY MANAGE local vendor support to ensure that the local provider has a monetary incentive to be responsive.
- MAKE SURE YOU HAVE at least one contact well versed in software contracts and services who will be available to consult with your global offices.
- EASE ADMINISTRATION and purchase costs by consolidating software support via an international software distributor.

Companies that intend to add their own global enhancements to standardized packages should first ensure their vendors can support them. Ensuring all subsidiaries are using the same release level is another issue raised by enterprisewide implementations. Typically, it means global companies will lag six to 12 months behind the general community in terms of release levels, J. D. Edwards' Hawthorne said.

"Multinationals tend to be a bit slower in migrating because of the extra time needed to take modifications to the next level and roll them out," he said.

Another important element to ensuring that software can be supported consistently around the world is to ensure your selection process is global. British-American Tobacco's Mak advises companies instituting global information systems to first put together a task force of representatives from geographically dispersed operating divisions to discuss plans.

Above all, AHP's Villano cautioned, don't overlook local business requirements in your drive for consistent global support. For instance, the economics of a certain business may not lend itself to costly upgrades. Or certain locations with a high priority on other projects may not have available staffing.

"You'll never be 100% consistent globally," he said. "What's important is to standardize and to know how to work around the differences in software versions so it doesn't get in the way of doing business."

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Cementing Relations With a Host Country

IT IS CENTER STAGE IN FORMING A HEALTHY BOND WITH LOCAL GOVERNMENT

Examining the role of IT in multinational corporations is key to understanding the world economy. Consider that multinationals today account for the bulk of world trade. And if you took 3% to 5% of the total annual revenues of the Top 2,000 multinationals, you'd get a good estimate of worldwide IT expenditures.

Although these global networks of computer centers represent some of the most expensive and complex technology ever built, it is not entirely clear what they really do.

I have identified five major themes of international business theory that can be shown to have a direct relationship with IT. What follows is one of the more intriguing of these: The relationship between the host country and the multinational.

Consider the following scenarios: American Express finds it must build separate data processing facilities in certain European countries to meet privacy regulations. Ford finds it is unable to use the newest front-end communications processor for its IBM mainframes in Brazil because they are not licensed by the government — and are unlikely to be because there is a "substantially equivalent" Brazilian product. The Swedish Parliament debates the national security risk of having the Malmo firehouse connected to computers in Cleveland. Potential investors in India are told indirectly that the number of data processing jobs they transfer to that country will be a factor in whether the investment will be approved by the government.

These are all examples of how government/multinational relations can spill over into the realm of IT. It has long been argued, for example, that some nations have used privacy regulations and other data processing controls as nontariff barriers to international trade.

There are many factors — political, economic and cultural — that determine the balance of power between the multinational and the host country. Some, however, see technology as the key driver. For instance, government restrictions can be targeted against international computer networking and the equipment needed to support it. The regulation of transborder data flow is a major breeding ground for conflict.

THE LABOR PROBLEM

Host country/multinational relationships can also change the international division of labor. Some observers, for example, view computerization as an opportunity to exploit developing countries.

Governments may impose restrictions — on hardware and software availability, networking and the use of applications, for instance — to alleviate the labor problem. They can subject computer imports to high tariffs and fees or quantitative restrictions, and the host country may emphasize use of local programming skills as it denies work visas to employees from headquarters. Governments may restrict international database access to force the multinational to build a duplicate database inside the host country. They may use prohibition against private networks to force the multinational to use more expensive volume-sensitive services in order to subsidize an inefficient national bureaucracy. They may enforce onerous database maintenance requirements under criminal and civil penalties in the name of protecting individual privacy. Lastly, they may make stipulations that the multinational operate data centers within the host country, regardless of economic considerations.

There is no apparent limit to interference in international computer networking, but some states also work their policy in the opposite direction. In these cases, state-generated enhancement of telecommunications infrastructure is used to tip the balance in favor of foreign direct investment. States may also engage in accelerated training as another way to improve factor endowments.

IT'S A PEOPLE ISSUE, TOO

It is easy to imagine how the management and technical challenges imposed by host country/multinational conflicts could place the IS function center stage in developing a national ("local") business strategy. We can see the disastrous results when multinationals choose the wrong people to handle host government matters and are subjected to a variety of government-imposed restrictions such as bureaucratic delays, additional restrictions or prohibitive taxes.

We need to learn more about how managers can prepare to cope with these host environments as they proceed to hire and train appropriate staff and adjust system development efforts to boost sensitivity to host government concerns.

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Briefs

How difficult would it be to persuade top management to approve network computers for some departments?

Base: 95 respondents responsible for PC management

Source: Computerworld Information Management Group, Framingham, Mass.

Prudential trims costs from desktop

▸ *Insurer seeks to drive down IT budget*

By April Jacobs

WHEN PRUDENTIAL Company of America wanted to trim its $1 billion IT budget, it looked at desktop costs with an eye toward consolidating purchases and standardizing software and hardware.

Of course, there is more to trimming an information technology budget than desktop costs.

But according to Russ Pipitone, vice president of personal technology procurement at Roseland, N.J.-based Prudential, desktop support makes up about two-thirds of overall desktop costs.

So the first step Prudential took several months ago was to look at ways to streamline support for its 60,000 users.

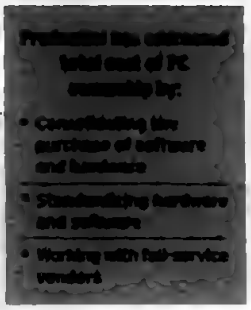
"If you look at costs, the biggest-ticket item on the list is people to support your infrastructure," said Bernie O'Neill, vice president of network services at Prudential.

STANDARDIZATION

The company settled on tools, such as Microsoft Corp.'s Systems Management Server, that would help automate and simplify troubleshooting. The company also is looking at tools that will distribute software remotely and automatically.

"Those kinds of tools will help drive a lower cost of ownership," Pipitone said.

He said Prudential also is standardizing its hardware and software, which Stamford, Conn.-based Gartner Group, Inc. says can reduce desktop costs by as much as 25%.



The more standardized you are, the fewer problems you have, Pipitone said.

Prudential is standardizing on Windows NT, although O'Neill notes there will still be some Unix servers for high-end financial applications.

"NT is our focal point for our distributed servers, because while we still have some corporate applications running on Unix — which is more mature — [Lotus] Notes and application servers will run NT," O'Neill said.

The company also consolidated its procurement efforts, which used to be distributed among business units in the U.S., Pipitone said.

Because of Prudential's size, Pipitone can get volume discounts, which also helps cut costs.

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NT MIGRATION?

AS/400 suits some users fine

By Tim Ouellette

SOME AS/400 SHOPS that are under pressure to replace that reliable midrange platform with Windows NT servers are having second thoughts.

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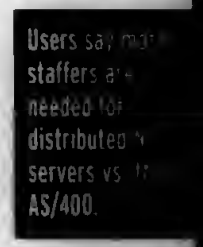

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AS/400, page 42

Health care workers take to handhelds

By Mindy Blodgett

THE USE OF handheld computers and personal digital assistants (PDA) among health care workers is growing because of the increasingly competitive nature of the field, according to industry observers.

"The belief is that, although you have an upfront cost when you institute handheld computing, by making the operation more efficient and eliminating paper, you can thereby eventually cut costs," said Philip Redman, an analyst at The Yankee Group in Boston.

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U.S. handheld market

	Units	Revenue
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1996		$2.49M
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Source: World Market Strategies, San Francisco

Participants at the recent Handheld Computing in Healthcare conference in Boston said the development of electronic patient records has lagged because of challenges such as cost and lack of standards among medical institutions.

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Dr. Steve Labkoff at Pfizer Pharmaceuticals, Inc. in New

Health care, page 42

HP bolsters Unix lineup

▸ *Eases move toward mixed environments*

By Jaikumar Vijayan

HEWLETT-PACKARD CO. is accelerating its efforts to let users build mixed Windows NT and Unix enterprises.

The company recently announced PA-RISC-based Unix servers aimed at high-end enterprise-class applications and will follow that this week with Intel Corp.-based Windows NT machines for lower-end applications.

MIXED BAG

The announcements are the latest in the company's unfolding Extended Enterprise strategy. Under that plan, HP will deliver a range of hardware, software and support services aimed at letting users build a heterogeneous enterprise composed of Unix, Windows NT and legacy systems.

As part of the strategy, HP plans to deliver by 2000 a range of highly scalable Unix and NT servers based on its PA-RISC chips and the new IA-64 microprocessor architecture it is developing with Intel.

The company also is developing software, middleware, integration suites and World Wide Web-based technologies that will help users tie together the different environments.

"There are some challenges associated with integrating the two environments," said John

HP, page 42

Servers & PCs

Large Systems • Workstations • Portable Computing

Briefs

Clustering for NT

Vinca Corp. in Orem, Utah, has unveiled its Co-Standby Server for Windows NT, a software clustering package. Co-Standby Server allows two file servers to be connected with industry-standard hardware. If either file server crashes, the Co-Standby Server for NT will automatically take over with a full copy of all data from both servers. The package will ship next month. It costs $3,999.

Promark laptop

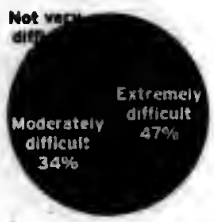
Promark Technology East in Laurel, Md., has released a ruggedized laptop that can be used in direct sunlight. The portable, called the i-series, weighs less than 15 pounds. It has a 100- or 133-MHz Pentium processor with memory sizes from 4M to 64M bytes and hard disk sizes up to 1.2G bytes. Pricing wasn't available.

PC Cards for 56K

Global Village Communications, Inc. in Sunnyvale, Calif., has released PC Cards that have 56K bit/sec. speeds and modem/Ethernet PC Cards for Macintosh and Windows notebook users.

The cards work with notebooks that run Windows 95. They use 56K bit/sec. technology from Rockwell Semiconductor, Inc. They cost between $219 and $379.

How difficult would it be to persuade top management to approve network computers for some departments?



Base: 95 respondents responsible for PC management

Source: Computerworld Information Management Group, Framingham, Mass.

Prudential trims costs from desktop

▸ *Insurer seeks to drive down IT budget*

By April Jacobs

WHEN PRUDENTIAL Company of America wanted to trim its $1 billion IT budget, it looked at desktop costs with an eye toward consolidating purchases and standardizing software and hardware.

Of course, there is more to trimming an information technology budget than desktop costs.

But according to Russ Pipitone, vice president of personal technology procurement at Roseland, N.J.-based Prudential, desktop support makes up about two-thirds of overall desktop costs.

So the first step Prudential took several months ago was to look at ways to streamline support for its 60,000 users.

"If you look at costs, the biggest-ticket item on the list is people to support your infrastructure," said Bernie O'Neill, vice president of network services at Prudential.

STANDARDIZATION

The company settled on tools, such as Microsoft Corp.'s Systems Management Server, that would help automate and simplify troubleshooting. The company also is looking at tools that will distribute software remotely and automatically.

"Those kinds of tools will help drive a lower cost of ownership," Pipitone said.

He said Prudential also is standardizing its hardware and software, which Stamford, Conn.-based Gartner Group, Inc. says can reduce desktop costs by as much as 25%.

The more standardized you are, the fewer problems you have, Pipitone said.

Prudential is standardizing on Windows NT, although O'Neill notes there will still be some Unix servers for high-end financial applications.

"NT is our focal point for our distributed servers, because while we still have some corporate applications running on Unix — which is more mature — [Lotus] Notes and application servers will run NT," O'Neill said.

The company also consolidated its procurement efforts, which used to be distributed among business units in the U.S., Pipitone said.

Because of Prudential's size, Pipitone can get volume discounts, which also helps cut costs.

Prudential, page 42

Prudential has addressed total cost of PC ownership by:

- **Consolidating the purchase of software and hardware**
- **Standardizing hardware and software**
- **Working with full-service vendors**

NT MIGRATION?

AS/400 suits some users fine

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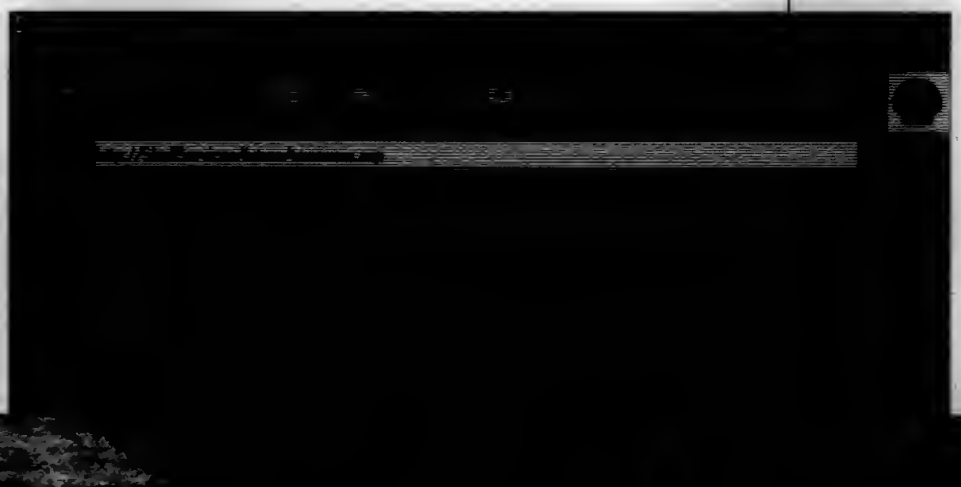
Give yourself remote control of your Intranet.

The Microsoft® Internet Explorer Administration Kit isn't much to look at. Just one wizard screen after another asking straightforward questions about how much power you want over your intranet. If you want to set your users loose to find their own way, set them free. If there are functions you don't want them messing around with, like security and network settings, lock them out. If you want to replace our logo with your logo and our name with your name, we don't care. Just get the kit. (We'll send it to you. It's free.) Set up your browsers the way you want them. Deploy them on CD or floppies, or send them over the Net; update them remotely or automatically. You don't leave your desktop. You don't leave your desk. Unless you want to stretch.



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AS/400 suits some users fine

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"The new AS/400 simplified and streamlined the way we worked the data compared with Windows NT, and that is all you really need," said Karen Rojek, a project manager at the Deerfield, Ill., company.

The Windows NT issue is pressing on users' minds, though, and many AS/400 managers will meet at a user conference this week in Dallas to discuss their options and the plans of IBM and Microsoft Corp.

AS/400 AND NT: AN UNLIKELY BATTLE

Windows NT dominates in new sites, but AS/400 shops may be more inclined to stay with the midrange system because:

- **AS/400 offers low-cost terminals or network computers as clients vs. Windows NT's 32-bit PCs**
- **AS/400 shops have skills more suited to the system's integrated features than to NT's component approach**
- **No long-term economic gain for AS/400 shops to move to and maintain Windows NT Server**
- **New AS/400 RISC machines are easier to migrate to and more powerful than latest Windows NT boxes**

Source: Aberdeen Group, Inc., Boston

ROOM FOR BOTH?

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Vendors back off some from NetPC

By Wylie Wong

FEARFUL THAT companies don't want a sealed-box design, some PC makers have backpedaled from the NetPC. They have plans to market similar computers that are cheaper and manageable but still let users configure their computers, some analysts said.

Dell Computer Corp. in Round Rock, Texas, Acer Computer International Ltd. in Singapore and Gateway 2000, Inc. in North Sioux City, S.D., each recently announced it will build "near-NetPCs" that include disk drives and let users install hardware and software, said Roger Kay, an analyst at International Data Corp. in Framingham, Mass.

"Everyone wants an inexpensive PC, a manageable PC, but not the third item — a sealed box," Kay said.

The NetPC, which is expected to cost less than $1,000, is the brainchild of Intel Corp. and Microsoft Corp. Unlike a traditional network computer that relies on a server for processing power and storage, the NetPC can run operating systems locally and can have a processor. It doesn't have a disk drive, however.

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COST SHIFTING, NOT SAVING

Frank Petersmark, an information systems manager at Amerisure Cos. in Farmington Hills, Mich., said NetPCs will shift costs around, not save money. He said he is more interested in the near-NetPCs because he wants better manageability.

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Robert Tuttle, a senior consultant at Kaiser, said, "People are starting to understand the cost benefits. You can save money in time and efficiency."

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The workers at Kaiser's health care centers will be linked via wireless LAN.

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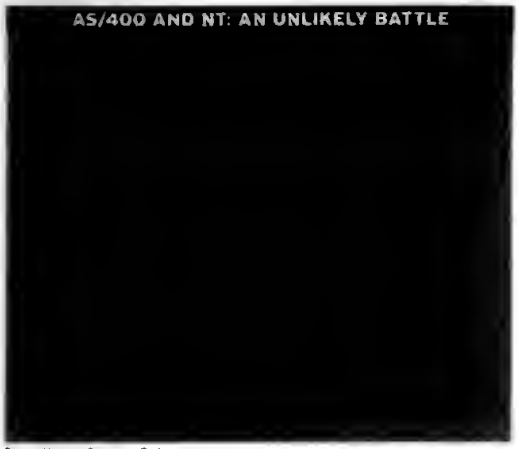

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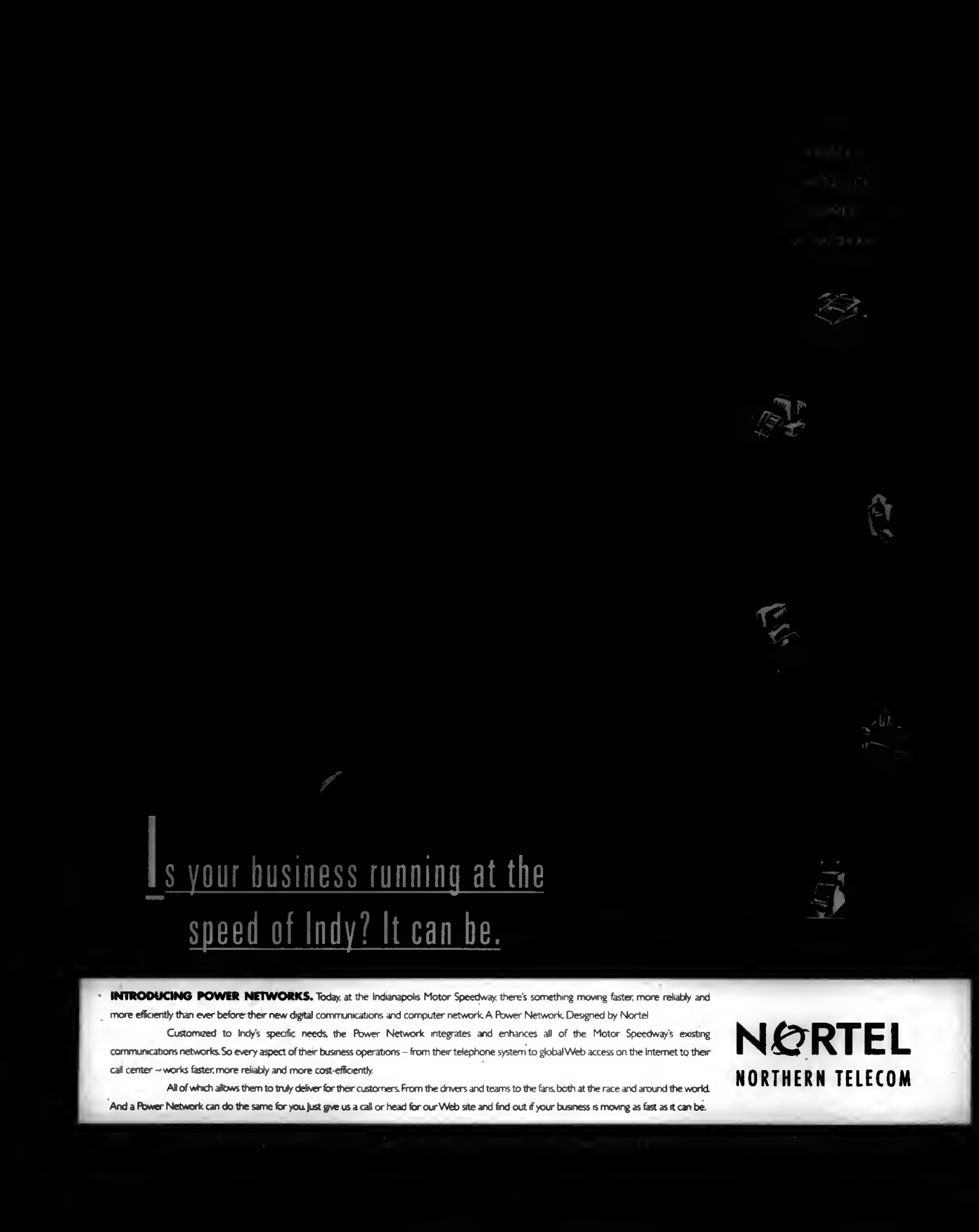

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NORTEL
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Briefs

FUTURE PLATFORM

Percentage of mission-critical database servers that various systems are expected to host in 2000

Base: 288 North American user sites with a combined total of 2,861 database servers

Source: Strategic Research Corp., Santa Barbara, Calif.

Gap styles its objects to keep up with growth

▸ *Web and data warehousing are key targets*

By Sharon Gaudin

THE GAP, INC. is turning to an object-oriented architecture to provide its sales force the information it needs to maintain the company's 20% annual growth rate.

"Our real goal is to be a leading retailer," said Phil Wilkerson, director of technical architecture at The Gap in San Francisco. "We knew we needed to get away from mainframes and a two-tier architecture and get to the Web and data warehousing. That's the key for us."

The Gap has 1,900 stores around the world and posted $5.3 billion in sales last year. Its fast growth rate poses some serious issues for the international chain's 3,000 users and its information technology department.

Part of the challenge in that kind of growth environment is keeping everyone connected and giving them immediate access to the most up-to-date information available. And at The Gap, that information is spread across a wide array of iron. Gap has IBM mainframes running on the back end, Sun Microsystems, Inc. Solaris servers on the middle tier and OS/2 and Windows NT-based desktops.

SIMPLIFY THE PROCESS

That means World Wide Web-enabling information on sales, inventory and shipments is going to be a little more complicated. For The Gap, it means bringing in Common Object Request Broker Architecture (CORBA) — a platform-independent, object-oriented architecture — along with Java, a cross-platform language designed to speed across the Internet.

"We have merchants and planners in offices around the world. They need access to purchase order information, like styles and quantity," Wilkerson

Objects, page 46

IBM seeks client/server database foothold

By Craig Stedman

AFTER SEVERAL years of effort, IBM hasn't made a huge dent in the client/server database market. But the computer giant is still giving it the old college try.

IBM hopes to gain a technical advantage over Unix/Windows NT rivals such as Oracle Corp. by shipping in September a version of its DB2 database that combines what had been separate multiprocessor and parallel products.

DB2 Universal Database also is being accompanied by a series of steps aimed at correcting IBM's biggest weakness: invisible marketing.

But client/server DB2 still can be a tough sell, even to some users who swear by the mainframe version of the database.

For example, The Guardian Life Insurance Company of America in New York chose Oracle over IBM to run a Windows NT-based sales proposal system for its group insurance unit, even though it uses DB2 on the mainframe.

DB2 was less proven on NT and fell short of Oracle on management tools when the decision was made late last year, said Thomas Baker, vice president of information technology at The Guardian. "Oracle also had a good customer base," he said. "That speaks to the quality of support you can expect [from application vendors]."

A lack of key packaged applications has been a roadblock for DB2. SAP AG, PeopleSoft, Inc. and The Baan Co. support DB2

IBM, page 48

Lotus goes retro with upgrade of 16-bit SmartSuite

By Lisa Picarille

WHILE MOST software developers are racing to deliver the second iteration of their Windows 95 applications, Lotus Development Corp. is attempting to make inroads with the large number of users looking for updated functionality from their Windows 3.1 software.

According to San Jose, Calif., market research firm Dataquest, more than 80% of desktops in large corporations still run Windows 3.1.

To take advantage of that, Cambridge, Mass.-based Lotus last week started shipping SmartSuite 4.5, an updated version of its 16-bit desktop productivity suite for the Windows 3.1 environment. Although Microsoft Corp.'s Office still has the dominant position in the 16-bit suite world, Lotus hopes to carve out a small but potentially lucrative slice of the pie with users whose primary interest is getting more Inter-

Lotus, page 46

Beefing up E-commerce

By Randy Weston
BOCA RATON, FLA.

Logistics planning software vendor Industri-Matematik International Corp. (IMI) is heading customer demand and beefing up its electronic-commerce system to better handle communications between user companies and their suppliers.

IMI, in Tarrytown, N.Y., announced at its user group conference here that it is integrating an intelligent messaging system from Frontec AMT, Inc. in Stamford, Conn., into IMI's core System ESS product.

The integrated product is meant to let users of IMI's demand-chain planning software react quickly to order changes, be alerted to prob-

E-commerce, page 46

Software

Client/Server • Development • Operating Systems

Briefs

Axent security for NT

Axent Technologies, Inc. unveiled a new version of its OmniGuard software aimed at dealing with some recently reported Windows NT security holes. OmniGuard Version 4.4 also tries to thwart hacker password cracking by reporting users who have easy-to-guess passwords, officials at the Rockville, Md., company said. The software aims to thwart one NT security bug — potential unauthorized registry access using an anonymous log-on — by reporting any registry that hasn't been properly protected.

Manufacturing tool

Dutch vendor The Baan Co. is integrating a new manufacturing plant synchronization tool into its Baan IV enterprise application package. The constraint-based planning mechanism is based on technology Baan gained in last year's acquisition of Berclain Group, Inc. in Quebec. The software was designed to let users synchronize plant and supplier operations and to schedule resources, from labor to materials to equipment. Such functionality is meant to reduce manufacturing lead times. The software is available now.

FUTURE PLATFORM

Percentage of mission-critical database servers that various systems are expected to host in 2000

Other PC servers - 2%

Proprietary midrange - 1%

Base: 288 North American user sites with a combined total of 2,861 database servers

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Objects maintain Gap's growth

CONTINUED FROM PAGE 45

said. "Because we deal with a variety of suppliers in various locations, they need to be able to get this information wherever they are, whenever they need it.

"In six to eight months, they'll be able to access that information off our mainframe through their browser," Wilkerson said.

OBJECT-ORIENTED ARCHITECTURE

A lot of IT people have been pontificating about using a Java/CORBA object combination, but the ones to actually jump in are still on the cutting edge of the curve, according to Amin Shahidi, western regional director for technology at Kurt Salmon Associates in Los Angeles.

TRAILBLAZER

"Gap obviously is betting that they can deploy their applications faster and drive costs lower by going with objects and Java," Shahidi said. "A lot of people have been talking about it, but few have taken that bet, so Gap will be blazing some new trails."

Wilkerson plans on using CORBA Object Request Broker (ORB), from Visigenic Software, Inc. in San Mateo, Calif., to serve as the middleware plumbing that will connect users' browsers to information in various databases.

Because the ORB is cross-platform, it can usher information to and from any database, whether it is sitting on a Unix machine, a mainframe or an NT server. Running Java on the front end will let Wilkerson easily send that information over the Internet.

Wilkerson explained that today, users need to have specific hardware, software and exact protocols to access that kind of information. "We're trying to sell pants. I've got to get them the information they need to sell pants," he said. "Right now, my support costs are up because I have to supply all these people with all this hardware, software and networks."

"We would still characterize Java adoption at this stage as early adoption," said Evan Quinn, an analyst at International Data Corp. in Framingham, Mass. "A lot of people are turning to Java and CORBA to get access to distributed information. They need objects for that, but adding Java makes it a lot easier."

TEST, TEST, TEST

Putting this object-oriented system together is a big job. There are a lot of pieces — a lot of ways to go wrong. So Wilkerson is using testing tools from Sunnyvale, Calif.-based Mercury Interactive Corp. to perform stress tests on the hardware, software and networks.

"With Mercury, we run test cases through the whole system. You always find something. It's critical because we can have a fabulous system, and if it doesn't perform, it's useless," Wilkerson said.

He said he runs the testing with actual load and volume. "Systems don't fail because they don't work," he added. "The pieces simply fail to perform together." □

Lotus goes retro with SmartSuite

CONTINUED FROM PAGE 45

net functionality without moving to Windows 95 or Windows NT.

SmartSuite 4.5 includes the 1-2-3 spreadsheet, Lotus Freelance Graphics presentation graphics, Lotus Approach database, Lotus Organizer personal information manager and ScreenCam, a multimedia utility. It also offers overall performance enhancements, including the speeding up of common tasks, such as load, open, save and copy.

But the 16-bit update focuses on enhancements to the Word Pro word processor — which is now on par with its 32-bit counterpart — by including facilities for accessing, sharing and publishing information on the Internet.

GOOD BRIDGE

Several users of Lotus SmartSuite 4.0 the previous, 16-bit version, said SmartSuite 4.5 makes a good interim product as they contemplate or attempt to complete a move to Windows 95 or NT.

"This is an excellent move on Lotus' part because there is still a fair amount of users [for whom] the only thing missing from their perfectly suitable Windows 3.1 desktops is easier access to the Internet," said an information systems director at a chemical company in the Midwest, who asked not to be named.

The update, called Word Pro 97 Edition for Windows 3.1, lets users download documents from the World Wide Web, save them and search for any word or key phrase from within Word Pro.

The revamped word processor also lets users publish documents to Web pages and includes more than 30 professionally designed templates to create Web pages. Users also can use the new authoring tool to create links and apply tags to documents from directly within Word Pro.

Word Pro users also can open documents from Hypertext Transport Protocol or file transfer protocol servers, which makes it easier to publish and access documents that reside on corporate intranets, extranets or the public internet.

SmartSuite 4.5 costs $399. Users of previous versions, individual Lotus desktop applications for Windows 3.1 or competing suites, spreadsheets, word processors, databases or presentation graphics packages can upgrade for $149. □

IMI's enhancements to its demand-chain planning software

Enhancement	Function	Availability
Messaging system	Integrates intelligent messaging system from Frontec AMT	Immediately
Transportation	Ties complex transport management functions from Metasys to IMI's demand-chain planning	Q1 1998
Service management	Manages postsale product and field-service activities	Q4 1997

Beefing up E-commerce

CONTINUED FROM PAGE 45

lems in an order and communicate up and down the supply chain.

"We have spent a lot of time and effort to get [electronic-commerce] communications going between the manufacturer, wholesaler and retail partners," said Frank Cahill, a project leader at Campbell Soup Co. in Camden, N.J. "IMI really fell short in this area. We have modified the [existing IMI] system to allow us to do what we need to do. But now IMI is addressing the whole picture so we can get the enhancements in the package."

Cahill said one of the problems with the existing system is that it won't reconcile problems in an order.

For example, if a warehouse worker enters an order as complete, but the shipping department could only fulfill part of the order, then the current software won't recognize that the order was incomplete.

The new system was designed to not only alert a user to this incompatible entry but also let the user view the entire order process to locate where the order was entered incorrectly.

Cahill said that while he is optimistic IMI will deliver a usable messaging system, the proof will be in the final product, which is now available.

Vinnie Mirchandani, an analyst at Gartner Group, Inc. in Stamford, Conn., said this added functionality puts IMI squarely in the pack with other client/server software system vendors such as German software giant SAP AG. But he added that as a group, enterprise resource planning software vendors have lacked robust electronic-commerce functionality.

Mirchandani said the vendors may have missed key opportunities because many "sophisticated supply chain companies" developed this type of system "on their own and didn't wait for the vendors," who are just now catching up.

For Jim Skinner, vice president of logistics and distribution at $600 million generic disposable diaper maker Paragon Trade Brands, Inc., timing is everything.

"E-commerce never flew like it should have, but now companies are getting serious about it."
– Jim Skinner, Paragon Trade Brands

Paragon, in Norcross, Ga., makes diapers for retailers such as Wal-Mart Stores, Inc. in Bentonville, Ark. Skinner said his company, which lacks a known brand name, needs to be more reactive to customer demands to compete with brand-name competitors.

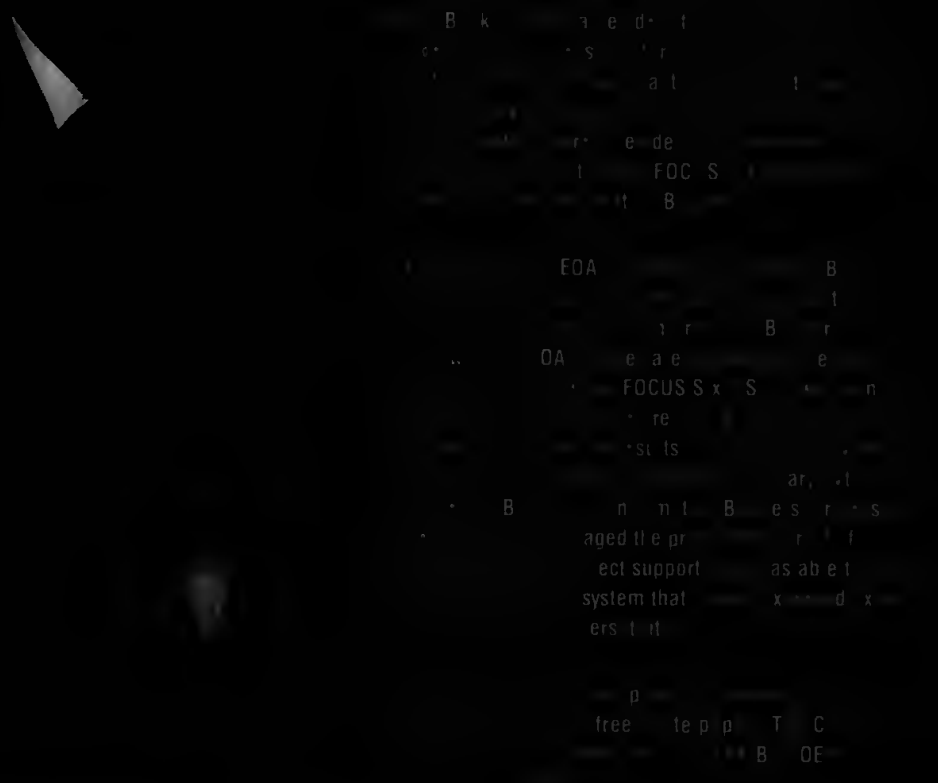
Part of that effort is tied heavily to communicating and reacting quickly to changes in customer needs to keep customers from turning to other manufacturers of generic goods.

That was the main reason his company turned to IMI, Skinner said.

"The more work [IMI does] in the electronic-commerce area the better," Skinner said.

IMI also announced an integration and joint marketing deal to integrate its ESS System with transportation management software from Metasys, Inc. in Charlotte, N.C., and the inclusion of a new service management module in System ESS for business equipment and industrial goods manufacturers. □

"We needed a Risk Information System we could bank on... We called The Builders."



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CA adds Internet features to OpenIngres

By Marc Ferranti

COMPUTER ASSOCIATES International, Inc. is set to roll out a major new version of OpenIngres, in the hope that a host of new features, including new multithreading, page-size and Internet capabilities, will satisfy current users and help CA make inroads against competing relational databases.

OpenIngres 2.0, due to be released in three weeks, has had a history that has taken it through a variety of vendors. Originally sold by Relational Technology, Inc., it was picked up by ASK Group, Inc. and then was acquired by Islandia, N.Y.-based CA in 1994. One of its strengths throughout its history has been its ease of use, said longtime users.

While maintaining ease of use, CA has added key features to the product, perhaps the most important of which are operating system threads and the ability to have large, user-defined page sizes, said beta-tester Karl Schendel, a vice president at Telesis Computer Corp. in Pittsburgh.

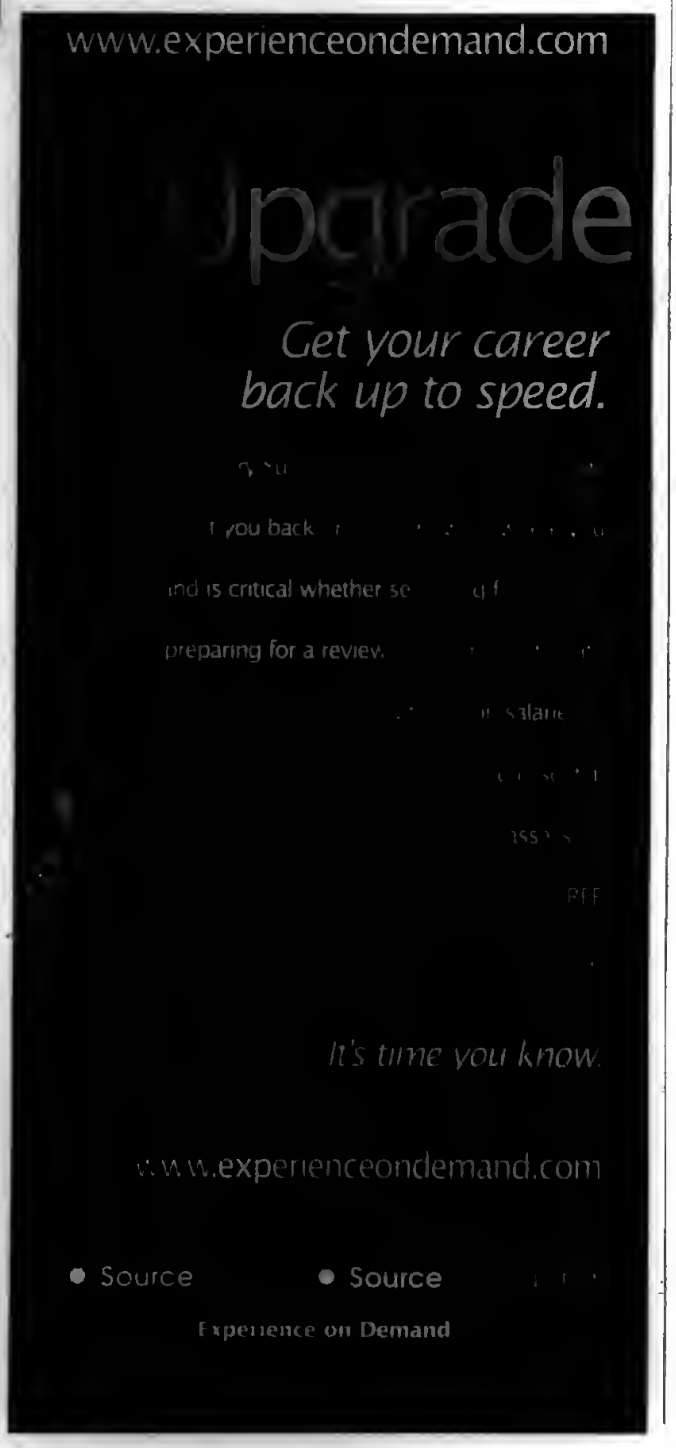
Previously, one copy of OpenIngres was required for each CPU that was going to run the database, according to Schendel. Now, with OpenIngres' support of operating system threads, administrators can run one instance of OpenIngres on a server and have various users simultaneously access the server copy, Schendel said.

OpenIngres 2.0 also lets users specify the size of the pages used for physical storage. In previous releases, those pages were fixed at 2K bytes. OpenIngres 2.0 lets users define page sizes as large as 64K bytes. Users can choose the most appropriate size for the hardware.

Page sizes can be specified on a table-by-table basis, and the larger pages let users create larger tables, up to 512G bytes. The new version also provides row-level locking in pages larger than 2K bytes on a table-by-table basis, according to CA.

Other internal database enhancements include moving the replication capture system into the core of the replication database server engine. □

Ferranti writes for the IDG News Service in New York.



TWO SIDES OF THE COIN

IBM is second in overall database sales...

1996 estimated worldwide database server market

Oracle	30%
IBM	26%
Others	44%

Total revenue: $5.7B

Source: Dataquest, San Jose, Calif.

... but DB2's client/server business is tiny

1996 estimated market share of DB2 on various systems

AS/400	100%
Mainframe	90%*
Unix/Windows NT	4%

*Or more. Includes both DB2 and IBM's IMS hierarchical database.

Source: International Data Corp., Framingham, Mass.

IBM enhances client/server DB2

CONTINUED FROM PAGE 45

on RS/6000s but not on non-IBM Unix servers. And of that trio, only SAP has committed so far to deliver a Windows NT version of its software for DB2.

Still, IBM is hardly chopped liver when it comes to selling databases.

The Armonk, N.Y.-based company is the only vendor that comes close to Oracle when all manner of databases are taken into account.

But most of IBM's DB2 business comes on the mainframe and AS/400, where it enjoys near-monopoly status (see chart).

By contrast, IBM was sixth in the client/server database market last year, according to estimates by International Data Corp. (IDC) in Framingham, Mass. And most Unix DB2 sales are still tied to IBM's RS/6000 hardware. "It's virtually nonexistent elsewhere," said Carl Olofson, an analyst at IDC.

Janet Perna, who became general manager of data management products at IBM last fall, is trying to beef up DB2's marketing. Among other moves, IBM has quintupled its channels marketing staff, created sales SWAT teams to work with application vendors and increased the DB2 advertising budget sevenfold.

Growing DB2's Unix market share won't be easy, because rival Unix hardware vendors "aren't crazy about calling in an IBM sales rep," Perna said. But IBM hopes to have better luck with large enterprises that are adopting Windows NT, she said.

MAINFRAME TIES HELP

Texas Guaranteed Student Loan Corp. in Austin is going with DB2 for its heavy-duty Unix and Windows NT applications. The affinity between mainframe and client/server DB2 "was a big factor" in choosing IBM over Oracle, said Andrew Bergstrom, assistant vice president of new products and services at the nonprofit insurer of college loans.

Blue Cross/Blue Shield of Tennessee runs its data warehouse on mainframe DB2 and is looking at the Unix version for a series of data marts. The ability to easily share information between the two flavors of DB2 "is a real incentive to stay close to IBM," said Frank Brooks, manager of data resource management at the Chattanooga health insurer.

But Blue Cross/Blue Shield also is considering other databases, such as Sybase, Inc.'s Sybase IQ, for the data marts. IBM's relatively small standing in the client/server database market "is why we're looking" at other options, Brooks said. □

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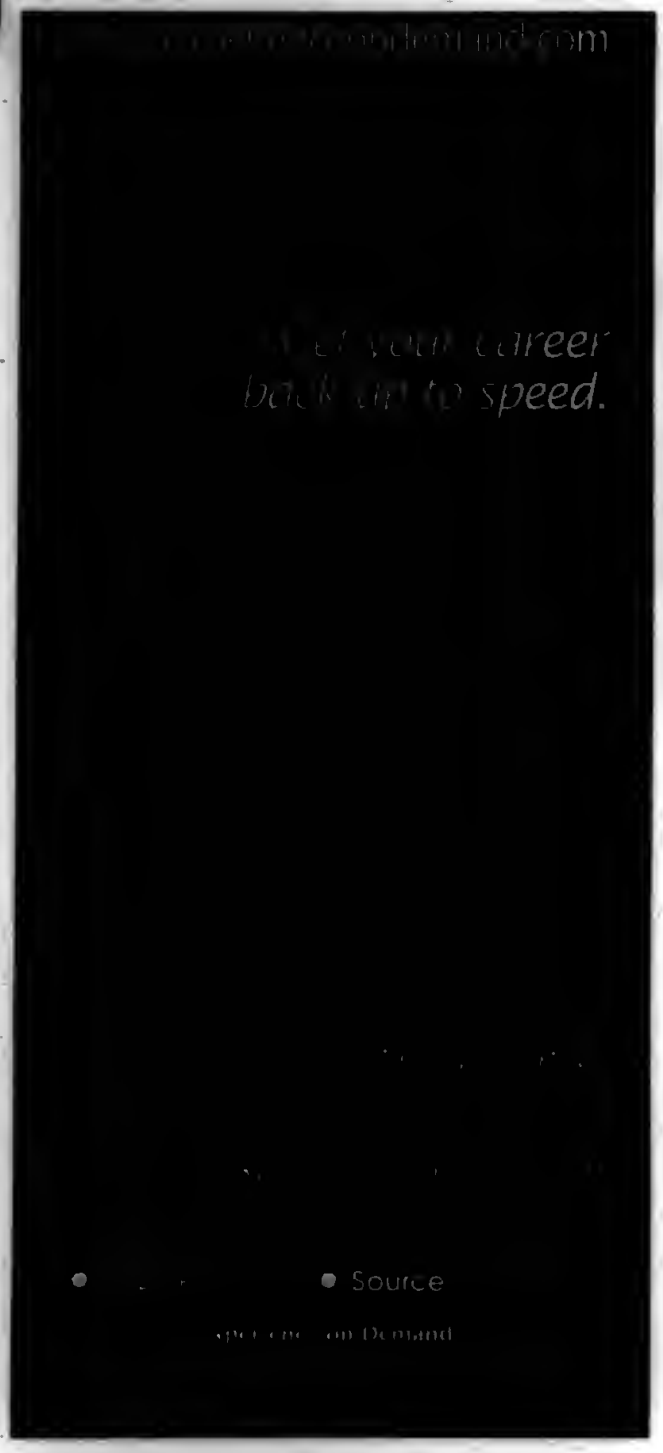

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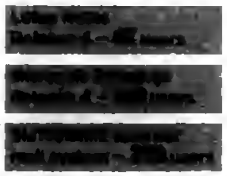
Briefs

How many users do you run per server?



Base: 66 IS professionals at large organizations in North America

Source: Creative Networks, Inc.; Palo Alto, Calif.

Frame-relay choice pays big dividends

▸ *Mortgage firm avoids ATM hype, quadruples network performance*

By Bob Wallace

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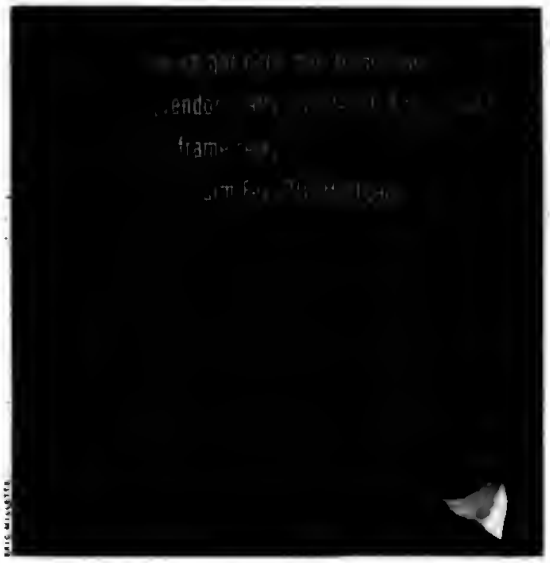

ERIC MISSETTE

A FORTIFIED NETWORK

Using money it would have spent on ATM, PMI has continually enhanced and fortified its network. It has installed Integrated Services Digital Network lines to back up about two dozen frame sites and has bought test equipment to verify network operations.

With network performance optimal, Fey said he is focusing some of his time trying to persuade vendors to simplify and enhance their communications security products. He is also building an intranet, examining virtual private network offerings and boning up on Java.

The frame-relay network runs at 56K bit/sec., which is the lowest dedicated frame speed but

Frame relay, page 54

• Midsize firms outsource E-mail

IS lets others send the messages

By Barb Cole-Gomolski

FACED WITH a dearth of IS skills, medium-size companies are increasingly handing off Internet mail and other messaging-related services to outsourcing firms.

Outsourcing Internet mail and services such as virus scanning and World Wide Website hosting makes sense for some companies because it can cost less than setting up an Internet mail gateway and managing end-user accounts. As electronic-mail outsourcers add services, information systems departments are finding that other mail-related functions can be off-loaded with good results.

E-mail outsourcers generally handle the delivery of Internet E-mail but don't store messages. Clients still use their existing E-mail client software and store messages locally.

"I planned to add a fax gateway to our [Microsoft Corp.] Mail system but never found the time to do it," said Cornell Stamoran, manager of planning and systems at R. P. Scherer Corp., a drug capsule manufacturer in Troy, Mich. The company's corporate office now uses Fabrik Fax, an Internet-based faxing service from Fabrik Communications Corp. in San Francisco.

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Firms outsource, page 54

OUTSOURCING E-MAIL

Pros:

- Costs less than setting up and managing mail gateways
- Lets companies get by with fewer mail administrator services such as faxing and Web hosting

Cons:

- Cost savings may erode for companies that have high mail volume
- Services usually support limited mail systems

Vendors put own identity on Rmon 2

By Patrick Dryden

THE PRESSURE to track service from the user's point of view is forcing information systems managers to consider a risk: bypassing the safe path of open-systems interoperability for a single-vendor shortcut to vital performance monitoring.

For example, at PageNet, Inc., the business goal of supplying wireless messaging services to more than 9 million subscribers requires high availability and responsiveness for billing functions.

To meet that goal, IS opera-

Vendors, page 54

The Enterprise Network

LANs • WANs • Network Management

Briefs

How many users do you run per server?

Lotus Notes Release 4 – 67 users

Microsoft Exchange Release 4 – 189 users

SMTP/MIME Internet mail system – 233 users

Base: 66 IS professionals at large organizations in North America

Source: Creative Networks, Inc., Palo Alto, Calif.

Business in a box

Emerging Technologies Solutions, Inc. in Greenwood Village, Colo., is shipping Business in A Box 4.5, a suite of 20 groupware applications that runs on Lotus Development Corp.'s Domino messaging and Web server.

The suite — which includes sales force automation, human resources and accounting applications — may be customized with Domino-compliant development tools. The product costs $695 for one server and five client licenses.

Wireless Token Ring

Fairlawn, Ohio-based Aironet Wireless Communications, Inc. recently released a set of wireless building-to-building Token Ring bridge products. The products will support communications over distances of up to 25 miles and work at 4M bit/sec. and 16M bit/sec. speeds. They are available now and start at $3,495. Antennas cost between $650 and $995.

Layer 3 LAN switch

Anritsu Corp. in Morgan Hill, Calif., recently announced its entry into the Layer 3 switch market with the DN8000, a LAN switch that can route at 500,000 packets per second. Layer 3 switches have built-in routing that can eliminate the bandwidth bottlenecks caused by stand-alone routers. The DN8000 switch costs $18,600 and will ship in the fall with a base unit and routing module.

Frame-relay choice pays big dividends

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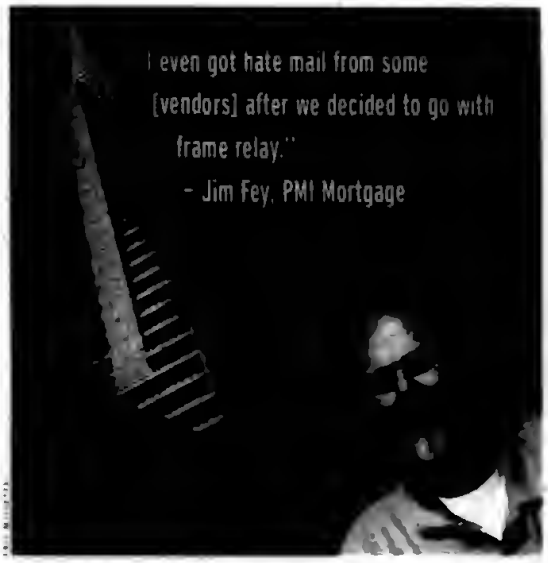

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CLOSER LOOK
Rmon 2 standard

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Vendors, page 54

Vendors tweak Rmon 2

CONTINUED FROM PAGE 53

tors now must be able to measure response time experienced by users to reveal potential bottlenecks, said Ken Owsley, network design analyst at PageNet in Plano, Texas.

"Once we build profiles for normal response times between systems, we can set thresholds to trigger alarms when performance slows," Owsley said. "At that point, the operators can "apply their tools to troubleshoot the cause down at the packet level."

Owsley is evaluating tools from four vendors that promise such help. But he and other IS managers in this situation face a problem.

Each tool measures response times differently, despite being based on the same second-generation Remote Monitoring (Rmon 2) standard. It is one example of how each vendor extends in its own way the standard methods for gathering performance data in hardware and analyzing it in software (see story at right).

Those proprietary extensions happen because standard-setting takes so long and vendors seek to differentiate their products, said Mark Bouchard, an analyst at Meta Group, Inc. in Westport, Conn.

The standard approach ends up providing "the lowest common denominator" of information, Bouchard said.

TRACKING SERVER USE

That information is still very valuable. Any Rmon 2-compatible product lets operators track which servers and World Wide Web sites users visit, for example.

"Rmon 2 breaks down the traffic to show where it's going, and that's better than utilization statistics," said Bob Napier, a network engineer at a Lockheed Martin Corp. campus that has 15,000 Ethernet nodes. "If we can characterize the traffic, then we can find bottlenecks easier."

To do more, IS managers risk getting locked into one vendor, Bouchard said. That can be a problem when companies merge, he said, because the resulting mix of monitoring products can't exchange the necessary performance data.

"Proprietary monitoring extensions are not such a bad thing, because we get added functions not provided through the standard today," said Paul Edmunds, a senior network management analyst at Duke Power Co. in Charlotte, N.C. "It's worth the incremental risk of working with a single vendor."

But for managers at one of the world's largest data networks, the trade-off between usefulness and interoperability has prevented widespread adoption of Rmon 2.

"Every tool we've tested puts a different spin on remote monitoring," said Jim Parkhurst, a senior staff engineer at MCI Communications Corp. in Washington. Advantages are lost because the back-end analysis software recognizes only information defined by the standard, not the extensions gathered by different vendors, he said.

Competitive vendors try to give customers a perceived advantage, but that approach will backfire, Parkhurst said.

"I can't justify the product value to my management when each implementation is unique," Parkhurst said. "They frown on me tying the company's success to the ability of a single vendor's development group." □

Tool evolution

Vendor support for the Rmon specification — which describes the utilization, errors and packets within individual segments — has been widespread for years.

It allows modules within internetworking gear or stand-alone probes to gather Rmon data so that central technicians running analysis software don't have to visit remote LANs to capture packets and diagnose low-level traffic problems.

In January, the Rmon 2 specification standardized Rmon extensions that vendors had pursued individually. Rmon 2 defines matrices to identify the endpoints of client/server traffic, for example, and tracks application information passing end-to-end across a network.

So far, vendor Concord Communications, Inc. in Marlboro, Mass., and integrator International Network Services, Inc. in Sunnyvale, Calif., provide software to analyze Rmon 2 data. Vendors gathering this data include 3Com Corp., Bay Networks, Inc., Hewlett-Packard Co. and NetScout Systems, Inc.

But vendors continue to extend Rmon 2 in their own ways. For example, Technically Elite, Inc. in San Jose, Calif., plans to enable its probes and software to measure application response time next month. HP and NetScout will follow by the fall.

— Patrick Dryden

Firms outsource E-mail services

CONTINUED FROM PAGE 53

maker of heating elements in Arlington Heights, Ill., said E-mail outsourcing saves his company money. Previously, the firm sent frequent faxes to suppliers in Mexico. Because calls are billed to the nearest minute, faxes cost about $3 each, even if the call took only a few seconds. The company now pays about 20 cents per message to E-mail its Mexican trading partners through an Internet mail outsourcing firm.

"Nine months ago, there probably wasn't much of a market for E-mail outsourcing, but now there are a lot of companies that are seriously considering it," said Bob Lewin, principal analyst for collaborative computing at Dataquest in San Jose, Calif. That is largely because midsize companies don't have the in-house skills needed to maintain today's messaging networks, he said.

MORE SERVICES

Companies such as Fabrik — along with Internet service providers — are also broadening their services. Fabrik this week will announce several services, including delivering business information from Internet-based news services to users' desktops, filtering messages based on size and other characteristics, sending personalized messages to users on a distribution list, scanning for viruses in E-mail attachments and hosting Web sites.

Interliant, a Houston-based company that already hosts Lotus Development Corp. Domino Web/Notes servers on its network, recently announced plans to host rentable collaborative applications as well as vertical applications for the legal, health care, financial and pharmaceutical markets.

Interliant will host the applications on its servers and make them available to users with either a Web browser or Notes client. MCI Communicationa Corp. has plans for an E-mail outsourcing service based on Microsoft Exchange.

MIXED REVIEWS

Several companies — including Andrew Corp. in Orland Park, Ill., and Manhattan Beach, Calif.-based Tornado Software Development — offer subscription-based services to give users access to E-mail, voice mail, faxes and paging through a Web browser or telephone.

Although users report success with such services, there are pitfalls, they said. E-mail outsourcing companies typically support a limited number of mail systems, which can leave some users out of the loop. And security questions still loom for some sites. □

Frame-relay choice saves mortgager thousands

CONTINUED FROM PAGE 53

about five times faster than the 9.6K bit/sec. private lines the frame links replaced. Users said they felt the performance boost immediately.

"We used to wait forever for screens to change," said Sue Nakata, a senior regional underwriting manager at PMI's Seattle office. "But once the network change was complete, we got much faster response times and found we could handle a higher volume of applications. It enabled us to become twice as productive and really helped morale around the office."

ATM is even faster, but it had a major shortcoming.

Even if the long-distance carriers gave away their portion of the ATM wide-area network links, the service would still cost five to six times more than frame-relay service, Fey said.

"And we determined in 1992 that frame relay would far surpass anything ATM could do from a technical standpoint," Fey said, as ATM was far more complex and less stable than frame.

Many ATM vendors also quietly advanced frame relay because few users were buying ATM. That meant vendor resources going unused for ATM installations were available for those going with frame relay. "They were falling over themselves to work with us," Fey said.

"We used to wait forever for screens to change. But once the network change was complete, we got much faster response times. ... It enabled us to become twice as productive and really helped morale around the office."

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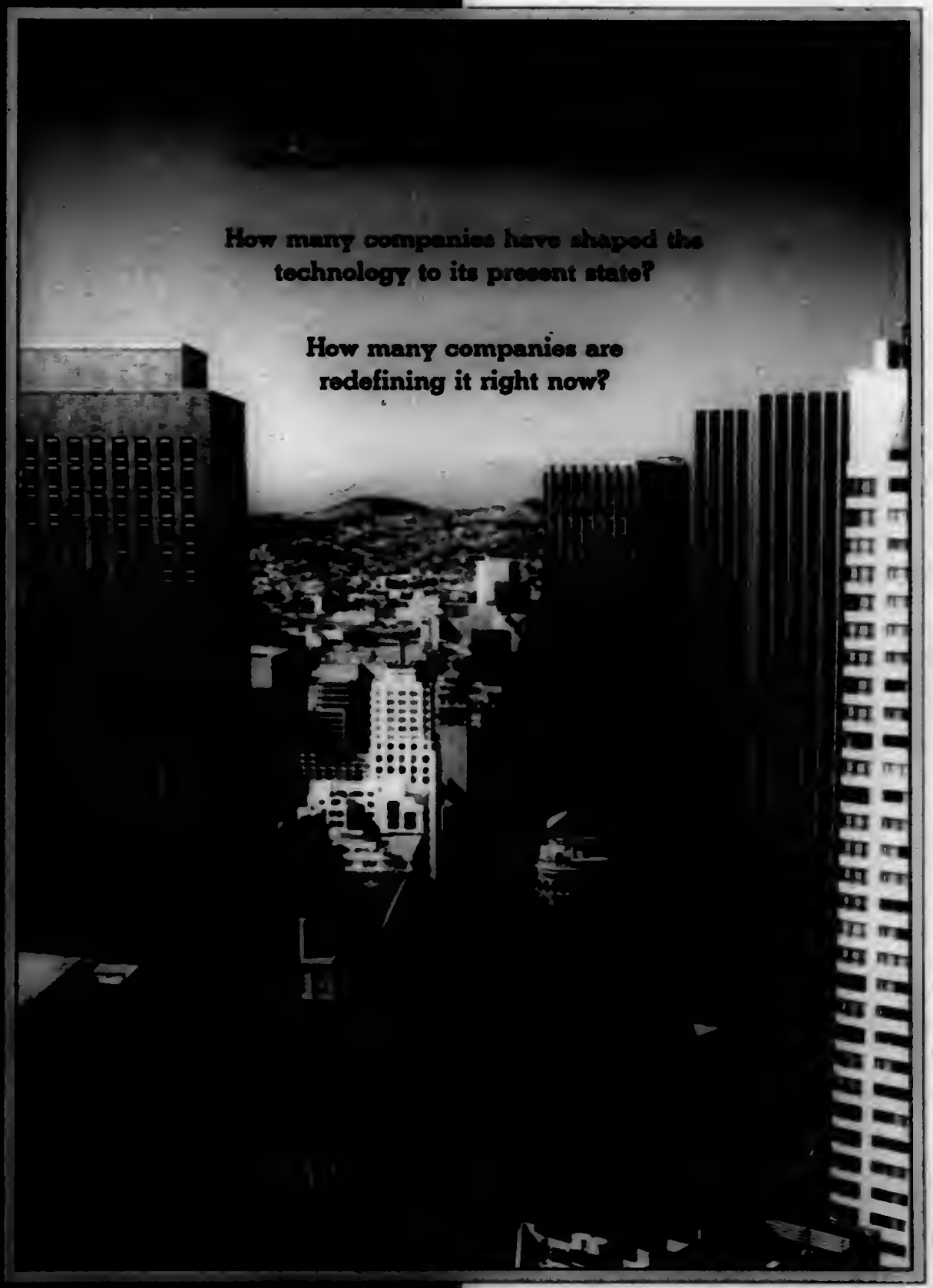
At the beginning of the project, Fey gathered the vendors that would take part in the frame project — IBM in Armonk, N.Y., 3Com Corp. in Santa Clara, Calif., and WilTel in Tulsa, Okla., (now LDDS WorldCom, Inc.) — and laid out his plan.

"We wrote into each contract that if the project failed, we were out of the deal. All three contracts would be null and void. Everyone agreed," Fey said

Any regrets on the move to frame relay?

"No. It was a great move for PMI because frame relay did everything it was supposed to do and more," Fey said. □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InfoWorld April 14, 1997

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LCD Touchscreen Diagnostics	Standard	Not Available
CD ROM	16X	6X
RAID Ready	6 Bays	4 Bays
Hot Swappable Expansion	6 Bays	None
Expansion Slots	12 Expansion Slots	7 Expansion Slots
Network Interface	10/100 Ethernet	10/100 Ethernet
On-board Disk Controller	Fast/Wide Ultra SCSI	SCSI-2
Server management	ALR InforManager™ with ActiveCPR™	Compaq Insight Manager™
Power Supply	700 Watts (1050 opt.)	466 Watts
Redundant Hot-pluggable N+1	Standard	Redundant only
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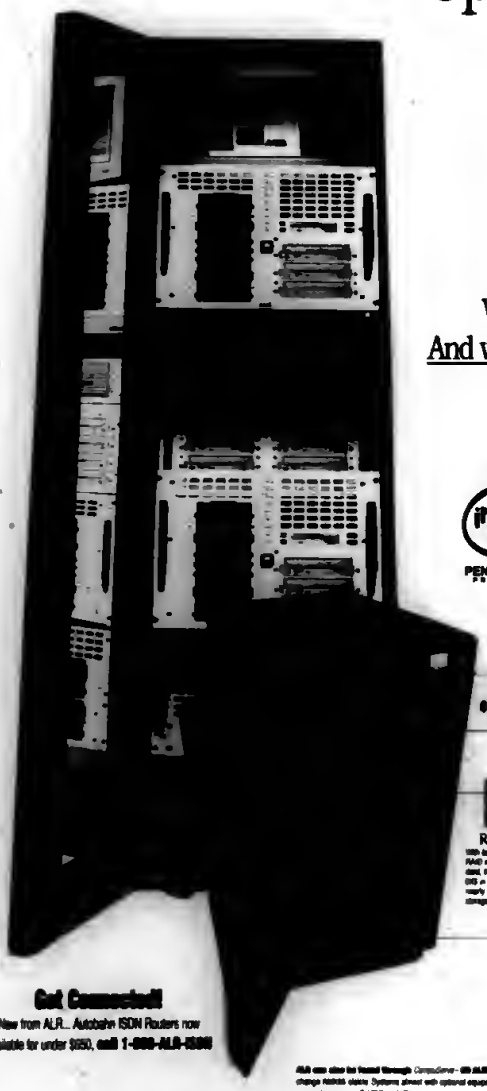
*Pricing based on EIC estimated street pricing. Verify price(s), configuration with specifications with product manufacturer.



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The Internet

Briefs

Weaving a good match

▸ *Cross-promotion can help boost Web traffic*

By Mitch Wagner

WHEN THE Sharper Image Corp. wanted to cross-promote its World Wide Web site with another business, it ended up making an offer that didn't make sense.

The San Francisco-based catalog and retail store signed a deal that gave online travel agency The Hotel Industry Switch Co.'s TravelWeb site exclusive rights to cross-license travel gear from The Sharper Image. The problem: On the Internet, you can't stop another company from putting up a link to your site. You can block the link, but you can't make the other site take it down without going to court. Ticketmaster Corp. recently sued to try to force Microsoft Corp. to remove links from its Seattle Sidewalk site that bypassed Ticketmaster's home page to reach deep within the site.

"Shame on me for making such a silly contract. But that's a common error for people who don't have a strong knowledge of the Internet," said Joshua Tretakoff, manager of alternative media at The Sharper Image. Until now, the unenforceable contract hasn't become an issue between The Sharper Image and TravelWeb, and The Sharper Image has gone on to do cross-marketing deals with other companies.

Cross-marketing can be a powerful tool for building business in Internet commerce, webmasters said. On the Internet, the boundaries between two sites aren't always apparent, and links are inexpensive and easy — as Tretakoff ruefully learned.

Webmasters looking for cross-promotions more effective than trading links are creating tailor-made offerings for specific joint ventures, providing joint real-world advertising and finding innovative ways to attract links from other sites.

Many, in fact, encourage the precise kind of "deep linking" that Ticketmaster is suing Microsoft over.

Cross-promotion, page 62

Utilities power up intranets

By Justin Hibbard

POWER COMPANIES preparing for deregulation have to be inexpensive to run and change quickly. In other words, they have to be a lot like intranets.

Many of them use intranets to get ready for competition. Intranets are inexpensive channels to distribute competitive information inside firms, users said. And because intranet software is based on open standards, developers can quickly break down and reassemble intranet applications — a key to competing in a deregulated world.

Flexible applications will be important to deregulated power companies because most of the companies will split their retail, wholesale, distribution and power generation businesses into separate enterprises, said Brad Holcombe, a partner in the utilities practice at Andersen Consulting in Chicago.

"In the new company of tomorrow, how do you break up the systems as these companies break themselves up?" Holcombe said. "The [information technology] organization has to take these pieces and pull them apart."

"Eighty percent of what we need to know is in the company"

Utilities, page 62

WEB REVIEW▸ *Alcohol and tobacco sites*

Vice sites walk a thin line

By Kim S. Nash

CIGARETTE AND liquor companies are in a tight spot. They have to sell hard in commodity markets, but overt pitches put them at risk for public backlash. The World Wide Web is especially tough because the Internet is widely considered — correctly or not — a young person's hangout.

Tobacco companies, with their holdings in food, beverage and other markets, are the largest companies in the world after oil and gas producers. But Web users wouldn't know it. Cigarettes are nearly invisible online.

Maybe the idea is to make smoking sites hard for kids to locate.

Philip Morris Cos., for example, isn't giving critics the

Vice sites, page 63

The Internet

Wide Web • Intranets • Onli

Briefs

SET-ting a precedent

Wal-Mart Online last week conducted what it says is the first real-time Internet transaction in the U.S. using the Secure Electronic Transaction (SET) protocol. A user with an American Express Co. card ordered a drill press from *www.wal-mart.com*. SET is a protocol initially developed by Visa International, Inc. and MasterCard International, Inc. for safe credit-card purchases on the World Wide Web.

CA backs off Web plan

Computer Associates International, Inc. has dropped plans for getting into the Web server hosting business. A year ago, Islandia, N.Y.-based CA set up a unit called NetHaven that planned to offer a variety of Web services, including physical management of Web servers for corporate customers. But NetHaven is being refocused solely on building electronic commerce Web sites for retailers.

Speeding Domino

Lotus Development Corp. in Cambridge, Mass., is shipping Domino Merchant 1.1, an add-on that doubles the speed of its Domino Web and messaging server for building electronic commerce applications, Lotus officials said. Domino Merchant costs $1,295.

Automated extranet

SpaceWorks, Inc. last week announced its E-Commerce Integrator program, under which the Rockville, Md., software vendor will put up a business-to-business extranet ordering system within 30 days, for $25,000 to $50,000. SpaceWorks will manage the site during the test period and build gateways to legacy systems.

U.K. to get first NC

NetProducts Ltd., based in the U.K., plans to launch the U.K.'s first network computer in July, company Chairman Hermann Hauser said at the Conference on Converging Technologies in Brussels last week. NetStation will cost $489.

Tower Records' Eoin McGloughlin encourages music sites to link deep into Tower's Web site

Weaving a good match

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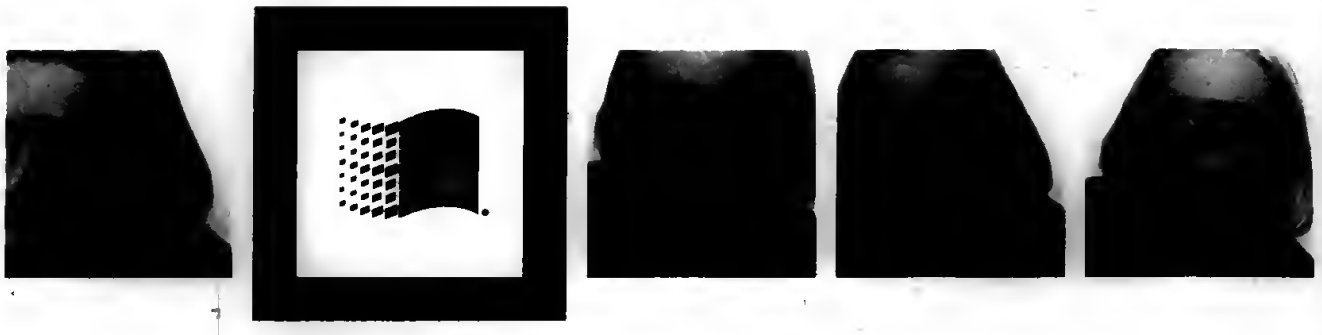
Philip Morris Cos., for example, isn't giving critics the

Vice sites, page 63



THERE WAS, IN FACT, A REASON THEY CALLED IT THE PERSONAL COMPUTER.

©1997 Microsoft Corporation. All rights reserved. Microsoft, Where do you want to go today?, Windows and the Windows logo are registered trademarks of Microsoft Corporation.

Oh yeah. There's a person sitting in front of it.

Oftentimes, that person is a very special person called an employee. Someone who walks through your doors in the morning and back out in the evening (sometimes, very late in the evening). Someone who will rewrite paragraphs in the shower. Or not. Someone who will work through lunch to make something just right. Or not. Someone who will care. Or not.

It is people who define business. It is people who will determine whether your company will be just good or damn good or great. We believe that given the responsibility and the right tools, the people who work for you will do extraordinary things. For millions and millions of people, the right tool is the computer.

What makes the computer *personal* is a program called Microsoft® Windows®.

Windows makes computing easier, so more people can actually use a PC. It is intuitive and simple and familiar, and recognizable from computer to computer, person to person.

Windows makes computing more powerful. More than *one hundred thousand* programs have been written for the Windows platform. So you can type words and calculate numbers, create presentations with animation and sound and video, do 3-D CAD design, send a message to the other side of the office, send a message to the other side of the world, manage inventory and payroll, draw, find things on the Internet, create your own intranet, build a database, manage projects, hold live video meetings on screen and check your spelling.

And Windows makes computing travel. You can take your powerful programs, travel 3,000 miles, use them, plug your notebook computer into a phone jack and work as if you were sitting at your desk.

Windows makes the computer a tool your people can use. And it is, when all is said and done, your people who are going to make the difference.

Where do you want to go today?® www.microsoft.com/windows/ **Microsoft®**

Cross-promotion

CONTINUED FROM PAGE 59

Barnes & Noble, Inc. in New York and *The New York Times* last month signed a deal to link individual book reviews in the *Times Book Review* with the Barnes & Noble site. Visitors to the bookseller site will be able to click on a button marked "Read the Review" to go to a review in the *Times* if the book was reviewed there. Conversely, online *Times* readers will be able to find a "Buy this Book" button at the end of reviews. The links will exist whether the review is a rave or a pan, executives said.

"There's a huge convenience for the user," said Martin Nisenholtz, president of New York Times Electronic Media Co. in New York. "You read about a book, you want to buy it, and you go right to it."

The link lets a customer jump directly to a completed Barnes & Noble order form to make it easier to buy books.

Tower Records includes on each of its pages a button that generates the page's complicated Web address so that visitors with their own Web pages can create links to any Tower page. The theory is that a Nirvana fan club page maintained by a college student, for instance, will link to the Nirvana section of the Tower site, bringing in more potential buyers, said Eoin McGloughlin, online services director at the West Sacramento, Calif., company. Tower uses the same technology to link to bigger sites, such as those promoting national concert tours and music magazines.

COMPUTERWORLD

For these and other related links, point your browser at www.computerworld.com/links/97060gadvertlinks.html

► Promoting your business: www.garlic.com/fjallnet/submarket/promote.html

► Web advertising terminology, statistics and usage: www.adrevenue.com/webprime.htm

And custom links aren't just for the musically inclined.

Atlanta-based United Parcel Service of America, Inc. recently began a program to help customers who sell goods online and ship them via UPS. Using an applet from UPS, those customers can put a link on their Web pages that helps their customers track the delivery of packages ordered online.

Likewise, NECX, a computer and electronics supplier in Peabody, Mass., offers premiums to computer vendors that link to the NECX page when those links result in sales. □

Mixing up the right marketing

On the Internet, as in the real world, successful cross-marketing means finding product combinations that make sense.

"You don't want to necessarily put all the canned goods together with all the dry goods," said Tom Loane, vice president and chief information officer at Alamo Rent A Car, Inc. in Fort Lauderdale, Fla. "You want to put the spaghetti sauce next to the spaghetti. That's what makes sense to the customer."

Early on, Alamo tried a cross-marketing deal selling bathing suits online. The company assumed people renting cars on vacation — especially in Florida — would want to swim. It didn't work out. Loane offered the theory that the project bombed because it involved luxury bathing suits, and people reserving cars online tend to be price-conscious. Now, Alamo is negotiating with hotels and airlines for cross-promotion deals, trying to build off the natural order of reserving facilities on trips. Surveys have shown that travelers first reserve air travel, then hotels and then cars.

Geoffrey Bock, an analyst at Patricia Seybold Group in Boston, said the right online relationship can help leverage brands that people trust to help build trust in Internet commerce.

"I'm going to a Barnes & Noble because that's a brand I think I can trust in book sales, and then I look at *The New York Times Book Review* because I like their judgment in books," Bock said.

Stan Lepeak, an analyst at Meta Group, Inc. in Stamford, Conn., said online cross-promotion offers very little risk.

"I can't see the downsides to it, except the opportunity to make yourself look bad on the Web." He added, "But you can do that on your own." — Mitch Wagner

Browsing mainframe data

► *Webfocus S/390 brings legacy data to Web*

By Justin Hibbard

DEVELOPERS FAMILIAR with Netscape Communications Corp.'s LiveWire development environment can now write applications that present live data from mainframes in formatted reports inside World Wide Web browsers.

Information Builders, Inc. in New York last week introduced WebFocus S/390 for Netscape, a version of its WebFocus application server that was designed to present legacy data on Web pages stored on Netscape's Enterprise Server. The product can access data from more than 65 different types of databases, including those that run on IBM's MVS mainframe operating system.

Using LiveWire — Netscape's collection of Web development and Web site management tools — corporate developers can write JavaScript applications that allow a Netscape Web server to draw data from WebFocus S/390, which in turn draws data from several databases.

Dan Bond, data warehouse manager at Paradyne Corp. in Largo, Fla., uses WebFocus to present formatted reports from a SQL database on his company's Web site. He said the product can replace mainframe-based report writers such as CA-Easytrieve from Computer Associates International, Inc. in Islandia, N.Y. But he said users will still use personal productivity databases, such as Microsoft Corp.'s Access, for formatted reports.

"I'd like most of our ad hoc reporting to be done through browsers," Bond said. "I don't see the use of Access going away, but for people who need a quick report on customer status, a report through a browser would get the job done faster than any other kind of reporting tool."

WebFocus and tools like it make data much more accessible to end users by putting it on the corporate intranet, said Ed Schaider, an analyst at The Standish Group International, Inc. in Dennis, Mass.

"That company may have people in Italy who are accessing the database in Racoon, Iowa," Schaider said.

But having to write applications to get the data is a drawback, he said.

"Increasingly, corporate America is buying [prebuilt software]," Schaider said. "They're in the business of making soda pop and toiletries, not in the business of making software."

WebFocus S/390 includes all the functionality of Information Builders' Focus visual development tool, including drag-and-drop styling and formatting. It can create a single Hypertext Markup Language document that combines results from multiple report requests with text and graphics from other sources.

The price of WebFocus S/390 ranges from $12,475 to $112,275 based on platform, and it is available now. Optional MVS drivers cost $2,875 to $25,875. Information Builders will also resell Netscape Enterprise Server with a server-side WebFocus plug-in for Windows NT and Unix for $5,900. □

Utilities power up intranets

CONTINUED FROM PAGE 59

Companies faced with unraveling inflexible Cobol applications will have a tough time, Holcombe said. By comparison, pulling apart intranet applications based on open standards is relatively easy, said Syed Mir, manager of systems integration at Ontario Hydro.

The Toronto utility reuses applications based on Hypertext Markup Language and the Common Gateway Interface, a standard interface for all World Wide Web servers.

"Whatever we're developing is easily changed," Mir said. "We can reuse the intranet applications that we've got on the retail side on the [power] generation side."

The retail and generation businesses use similar applications for billing and managing accounts. The retail business sells electricity to consumers, and the generation business wholesales power to other utilities.

Ontario Hydro is moving applications to its generation business because it expects to sell electricity to other power providers when deregulation hits. Mir said he expects to move the applications in three months for less than $100,000 ($72,590 U.S.).

The company is testing an application that lets users modify customer accounts using forms inside Web browsers. To instill a sense of urgency in the new competitive work environment, a clock icon on the forms shows how many hours or days it takes to complete a process.

Icons change from green to yellow to an urgent red as time and deadlines pass.

FOLLOWING TRENDS

Deregulation of the power industry is an international trend. The U.K. and Australia have already deregulated to allow more competition among utilities, and the U.S. and Canada are preparing to follow suit.

The Ontario government hasn't yet set a date for deregulation. But in California, power monopolies will end Jan. 1. Pacific Enterprises, a utilities holding company in Los Angeles, will enter the electricity market later this year when it completes its merger with Enova Corp., a power company in San Diego.

Pacific Enterprises already uses its intranet to compete in the gas market. The company expects to use intranet applications to compete in the electricity market as well.

The company last year developed a threaded discussion application that lets employees exchange competitive intelligence. Users post articles gleaned from news services, but the most valuable information often comes from tips employees pick up in the course of their work, said Heather Copeland-LaBruno, Internet development coordinator at Pacific Enterprises.

"Eighty percent of what we need to know is in the company," Copeland-LaBruno said. "It's just a matter of getting a place for them to tell you what they know." □

REVIEW ▶ *Alcohol and tobacco Web sites*

Vice sites walk a thin line

CONTINUED FROM PAGE 59

chance to complain about appealing to underage Web users: It hosts no sites at all for Marlboro, Parliament, Virginia Slims or the five other brands that together make Philip Morris the No. a cigarette maker in the world.

The $69.2 billion company doesn't even have a general corporate site.

Attracting children may also become s tough issue for alcohol sellers.

The flimsy warnings many liquor sites carry — saying visitors must be of legal drinking age to enter — aren't likely to deter curious minors. And the cartoon mascots and interactive games that some alcohol sites offer may even sttract kids.

COMPUTERWORLD

For these and related links, point your browser at www.computerworld.com/links/970609alcohollinks.html

➤ Alcoholic beverage links
www.catering-uk.co.uk/catering-uk/uk-alcbev.html

➤ World Wine Encyclopedia
www.winezin.com/wine.html

➤ Laszlo's Lengthy List of Luxury Smokes
www.teamk.com/smokers/luxury.html

But those are issues for the Federal Trade Commission to consider. On to the reviews.

R. J. REYNOLDS TOBACCO CO.
It took some digging to find the few big-name tobacco sites that do exist. The path to market-leader R. J. Reynolds' site, for example, is a button buried on RJR Nabisco Holdings Corp.'s corporate site. Neither the Yahoo nor the Alta Vista search engine turned up this locale. And the uniform resource locator isn't exactly intuitive (see chart).

Reynolds' site makes no mention of the company's 10 cigarette brands, which include big sellers Camel and Winston.

Instead, Reynolds tries to provoke smokers to protest attempts to control tobacco advertising, sales and consumption.

There are links to the American Smokers Alliance, the National Smokers Alliance and other pro-smoking groups. A spinning "smokers rights" button appears at least three times on the home page and countless times on subsequent pages.

But Reynolds missed the chance to collect personal information from key customers by not letting them sign up online; they must call s toll-free number.

And the Reynolds' smoking rights group's mission statement has a few typos, which is always bad form.

The "Who is RJR" section mostly gushes about various awards employees have won for community outreach and other feel-good deeds. For example, a Reynolds scientist recently reached the 7-gallon mark for donations of blood platelets to the American Red Cross.

The page provides no corporate information, except for s separate file to download. (However, I couldn't view the "x-octet-stream" file with my browser, and Netscape Communications Corp.'s Web site had no plug-in to allow it.)

Not a lot of substance here, nor much style.

BUDWEISER
Talk about merchandising! To visit Budweiser online is to become a heavy bag for advertising punches.

Anheuser-Busch, Inc. urges you to paste, wear and wallpaper the Budweiser name all over your person and PC. Electronic postcards, screen savers, ball caps, drinking game instructions — you name the ploy, and Bud uses it.

The so-called lifestyles section is about cooking with Bud, s notion that would make Wolfgang Puck cringe, no doubt. Users can select from "Beer with food," "Beer as food" or "Beer in food." Bud drinkers must not do much cooking, though, because only one recipe appears each month.

Hunters, evidently, are among Budweiser's biggest drinkers. There are quizzes, shooting safety guides, lists of hunting season dates for various parks nationwide and a bunch of other appeals aimed at the shoot-and-holler set.

The site often echoes Budweiser's televtsion commercials. The talking frogs shtick, for example, is repeated online in the form of a downloadable screen saver.

The site gets credit for devising countless ways to say the same thing: Drink our beer.

ABSOLUT VODKA
V&S Vin & Sprit AB, the Swedish company that makes Absolut vodka, tries an understated, theme-site approach with only a minimal sales pitch.

Rather than tout vodka using gimmicks, as Budweiser did for its beer, the Absolut site focuses on teaching visitors about s particular topic. In this case, it is short-subject animation.

Visitors can play any or all of 24 animations created by artists all over the world. Week Six, for example, featured computer-generated animation from a University of Pittsburgh art teacher and stop-motion photography from a father-and-son team in the Netherlands.

The neat Tool section lets you create s 5-second film with Jsva. The Q&A section is misleading. It isn't s FAQ, but simply an electronic-mail link for submitting queries.

The site is simple to cruise — it has an elegant design with minimally intrusive graphics. That's surprising for such an arty site. Absolut vodka and the company that makes it are nonexistent on most pages. Unless you are an artist, you probably won't revisit.

High on style but low on substance. I wanted at least some corporate data or vodka lore.

BACARDI
Bacardi-Martini U.S.A, Inc. gets big points for giving users a choice of Web site views.

The high-bandwidth portion sports "graphics that will blow your mind."

And the animation is pretty neat, though unnecessary. Text-only is just that. "Somewhere in between" offers some snazzy-but-compact multimedia geared for users of 14.4K bit/sec. or 28.8K bit/sec. modems.

Bacardi offers items that have become standard on most liquor sites: recipes for mixed drinks and a virtual bar chat forum. But Club Bacardi, as the site is dubbed, has a cleaner, simpler layout than others.

The site map is handy, as are links across the bottom of the home page. But the small, colored type is hard to read.

The design and typeface are more sophisticated than that of, say, Budweiser. Presumably that is to appeal to a more adult crowd. There is s lot of text at Bacardi and few dancing graphics.

One hokey feature is a soap opera. Recently, a model named J. C. was on vacation. "As she put on her bathing suit, she savored the time to herself, when no one was fixing her hair or maneuvering her clothing." Scintillating, huh?

Style and substance are just about equal here, and both are better than at rival sites. □

HOW THEY STACK UP

NEW PRODUCTS

FAXSAV INC. has announced Internet faxing from the desktop achieved by embedding its FaxSav Server Link Software in the RightFax NT Server from RightFax, Inc. in Tucson, Ariz.

According to the Edison, N.J., firm, fax processing is done at the server, which frees the desktop workstation. The software was designed to retry fax transmissions if the receiving fax is busy or out of paper.

Pricing starts at 15 cents per page for faxing in the U.S.

FaxSav
(908) 906-8000
www.faxsav.com

HREF TOOLS CORP. has announced WebHub 1.0 to help Delphi developers build Internet and intranet applications.

According to the Santa Rosa, Calif., company, WebHub simplifies the Delphi 3 development process by providing components for multiuser state management, constant database connections and Hypertext Markup Language page generation.

Pricing starts at $365.

HREF Tools
(707) 542-0844
www.href.com

How long will it take before you with their credit

{ Imagine if it

your customers finally trust
cards over the Internet?

happened next month. }

HP's Midrange NetServer LH Pro

Up to 54GB internal hot-swappable storage capacity, expandable to 324GB external storage

Winner of "Best Product of the Year" for file servers from *PC Magazine*

Up to 1GB ECC memory capacity

Dual processing 6/200 Intel® Pentium® Pro processors

Nine expansion slots—four PCI, four EISA, one shared PCI/EISA

HP Remote Assistant EISA card

From $6,160*

The only thing it controls better than your system is your costs.

Gain control: www.hpresource.com/lh_server

*$6,160 is the projected U.S. street price. Intel Inside and Pentium are registered trademarks of Intel Corporation. ©1997 Hewlett-Packard Company PPG449

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Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

Du Pont outsources

Du Pont Co. last week launched an information technology outsourcing deal with Computer Sciences Corp. (CSC) in El Segundo, Calif., and Chicago-based Andersen Consulting. The alliance, first announced last December, is a ten-year, $4 billion deal. Roughly 400 Du Pont information systems employees have been transferred to Andersen, and 2,600 employees have been shifted to CSC. The remaining 1,500 staffers will stay at Wilmington, Del.-based Du Pont. Andersen Consulting will develop chemical business software designed to enhance Du Pont's manufacturing, marketing, distribution and customer service activities. CSC will run Du Pont's global information systems and technology infrastructure.

EDS looks for 2000

Electronic Data Systems Corp. in Plano, Texas, expects to spend $144 million in the next three years to prevent and test its systems for year-2000 problems. EDS arrived at its estimate after spending a year studying its contracts and surveying its customers. EDS's figure covers the costs of updating its customers' hardware and software.

How important is it for a company to have a disaster recovery plan in case critical applications are suddenly interrupted?

Base: 1,400 CIOs

Source: Ibid Consulting, Menlo Park, Calif.

They saw, they planned, they won

▸ *Project leaders lauded for their tactics*

By Julia King

FORTUNE 100 companies last year canceled 33 out of every 100 software projects and ran over budget or beyond deadline on another 40 applications.

All told, the development fiascoes cost $145 billion, according to The Standish Group International, Inc., a consultancy in Dennis, Mass.

All that makes the five projects described here noteworthy.

These are the success stories — major information systems projects that were brought in on time and on or below budget by managers whose efforts recently earned them 1997 Project Leadership Awards from ABT Corp. in New York. As a group, the projects illustrate that focusing on the fundamentals — that is, planning the work, then working the plan — remains valuable advice.

Julio Gonzalez

Pantex Plant, Amarillo, Texas

Doug Heatherly

Project: Redesigned more than 170 business processes and replaced 47 separate systems with integrated configuration management software

Project cost: $8 million

Project manager: Doug Heatherly

Business payoff: The project shortened cycle times, reduced personnel costs, increased facility availability and cut inventory and equipment replacement costs for a total savings of $1.8 million in the first year. Projected additional savings is $5.7 million over the next three years.

Lessons learned: Schedule 15% more time than it takes to actually complete the work so team members can review, discuss and understand plans.

And assume nothing. Eliminate uncertainties by making an immediate extra phone call to check out a vague user requirement. "To get 18 people together, you need a one-and-a-half-week window to get them in the same place. This kind of thing killed me in the past," Heatherly said.

Janet Vasak

And if it takes days to get an answer to an electronic mail or team members cancel meetings, visit them personally to find out what they need to get back on track, he said.

Science Applications International Corp. (SAIC), Arlington, Va.

Project: Implemented a standardized, repeatable process for developing, maintaining and enhancing information systems

Project cost: $215 million over seven years

Project manager: Janet Vasak

Business payoff: Since 1991, SAIC's customer, the U.S. Environmental Protection Agency, has accepted 98% of 2,900 projects. With consistent work procedures, developers

Winning leaders, page 68

One woman's success in a man's IT world

Janice Roberts is arguably one of the most powerful women in Silicon Valley. As senior vice president of marketing at 3Com Corp. in Santa Clara, Calif., since 1992, Roberts is known as the "dealmaker." More often than not, she is the lead negotiator in 3Com's many acquisitions. She most recently took the point role in the company's purchase of U.S Robotics. Roberts recently spoke with Computerworld's Laura DiDio about what it's like at the top for a woman.

CW: The obvious question: How does a girl from the English farm country get to be a top Silicon Valley executive?

ROBERTS: My father and grandfather were engineers. I have two brothers, neither of whom was interested in Dad's business at General Electric, so he ended up taking me to the office.

CW: You were never steered into the traditional role of wife/mother?

ROBERTS: My Dad tried. Even though I worked at GE with my Dad during school, he still thought I should be a secretary or a nurse. I thought, "God, I can do better than that."

CW: Did you encounter gender bias?

Roberts, page 68

Migration migraines pain CUC/HFS merger

▸ *Unifying databases causes headache*

By Thomas Hoffman

CUC INTERNATIONAL, INC.'S plan to acquire HFS, Inc., a travel and real-estate juggernaut, in a $10.9 billion stock swap could open up enormous cross-selling opportunities for the direct marketing firm.

For example, say an insurance salesman who is relocating from St. Louis to Dallas contacts an HFS Coldwell Banker real estate agent to sell his house.

As soon as the listing goes into Coldwell Banker's database, that could trigger an alert to a CUC marketing representative to offer the salesman special rates on a Ramada Inn hotel room or an Avis, Inc. rental car — both HFS units — prior to his arrival in Dallas.

But the onus is on the information systems staffs at CUC and HFS to make that vision a reality, company executives and industry gurus said.

The deal, announced late last month, received a chilly reception from Wall Street analysts who were skeptical about the companies' ability to cross-market effectively to customers.

Stamford-Conn.-based CUC is highly regarded for its ability to capture customer information electronically and use it for cross-marketing opportunities.

It may require a lot of work to interconnect CUC's data systems with HFS.

The company maintains a database of more than 1 billion names that it uses to support its membership-based discount consumer services, such as Travelers' Advantage and Shoppers' Advantage.

Marketing migraines, page 68

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How important is it for a company to have a disaster recovery plan in case critical applications are suddenly interrupted?

- Somewhat unimportant-1%
- Not at all important-1%

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Marketing migraines, page 68

Winning leaders share tactics

CONTINUED FROM PAGE 67

can move easily from project to project. That reduces the need to recruit and hire workers.

Lessons learned: Set up a structure for everything, from engineering changes to user acceptance of completed software.

"Learn from your mistakes," Vasak said. "We put in a process improvement program from Day 1 so we'd have mechanisms to learn what we could do better and what we should avoid."

The Chase Manhattan Bank, New York

Project: The bank created a software-based bridge that links two vast customer information systems following its August 1995 merger with Chemical Bank. It was completed in less than eight months by 40 people, many of whom hadn't worked together before.

Project cost: Not available

Project manager: Julio Gonzalez Jr.

Business payoff: The project quickly allowed Chase to make good on its promise to serve all 3 million customers at pre-merger service levels.

Lessons learned: Minute-by-minute planning and constant communication were key under such an extraordinarily tight schedule. Each day was scripted from start to finish, beginning and ending with meetings with all team members. All 700 branch banks received daily progress reports via E-mail from Gonzalez, who also reported to senior managers weekly. "I sent out 700 E-mails every day, which reinforced that this was an event for everyone in the bank," Gonzalez said. "I had people tell me how they'd follow our progress or adventures on a [daily] basis, like a serial or soap opera. It kept them involved in how it would all turn out."

GTE Telecommunications Services, Inc., Tampa, Fla.

Project: Developed and enhanced an integrated suite of software-based fraud protection services for wireless communications companies

Project cost: Not available

Project manager: Gene Dressler

Business payoff: The project quickly and significantly expanded GTE's product offerings in a highly competitive market.

Lessons learned: Don't be afraid to squash big egos to finish a project on time. "We had to sacrifice one or two of our A team [members] to get on with this project," said Dressler, who also said he believes in sticking with the basics. "Keep it simple, manage risk and communicate," he said. "The technology gets more and more complex, but the simple fundamentals still work."

Delta Health Systems, Inc., Altoona, Pa.

Project: Reviewed and recoded approximately 1 million lines of Cobol code for a scheduled 1998 rollout to Delta's customer base of home health agencies.

Project cost: $1.2 million

Project manager: Jim Wagner

Business payoff: The project headed off potential year 2000 business interruptions and customer service problems. It came in six months ahead of schedule and $39,000 under budget. And it gives Delta customers a full two years to implement their new year 2000-compliant software.

Lessons learned: Handpick the best year 2000 team members. Budget and account for year 2000 projects separately. Stick to fixes. Don't include enhancements to expansions in year 2000 projects. "Don't try to add work to this effort, because it's big enough," Wagner said. □

Roberts

CONTINUED FROM PAGE 67

ROBERTS: Initially, no. I felt if you worked really hard and were dedicated, you did well. When I moved to STC PLC, I did encounter sexism.

CW: What happened?

ROBERTS: You walk into a room, and people comment on what you're wearing. They just didn't take me seriously. I carried on and refused to let it bother me.

CW: Tell us about your mentors.

ROBERTS: One was Graham Davis at STC. He was tough, but wonderful. His attitude to me was, "I'm going to be harder on you because you're a woman — it's going to be harder on you, so I'm going to help you out by being twice as tough." That paid off.

CW: How do you deal with women's issues?

ROBERTS: I raise the issue with Eric [Benhamou, 3Com's chairman] and the board. But I probably don't raise it enough. This is awkward because I don't actually think we do enough for women and families. We do lots of great things in terms of benefits, vacation, flexible hours and bringing children to work, though we don't have an on-site nursery. That's probably something we should do.

CW: Do you see that attitude changing?

ROBERTS: You have to be careful. I find with lots of senior people at any high-technology firm, if you push the "woman thing" too much they don't like it. They push back and say, "We want the best person for the job." Obviously, that's the right thing to say.

CW: How has the mommy track affected you. Was it a conscious decision to put your career first while you climbed the corporate ladder?

ROBERTS: Yes. I've had two children in three years. If I had them earlier, I don't think I would be where I am now. That's sad when you think about it. As a single woman, I was able go anywhere, anytime and be first in the office and last out. Being a mother changed that.

CW: Still, you are a rarity. Only 2% of senior executives at Fortune 1,000 firms are women.

ROBERTS: We still have very few women at senior levels. We have had instances [in which] women at 3Com leave because it's too much of a juggling act.

CW: Does 3Com have any type of formal mentoring program?

ROBERTS: We don't. When I was at ICL, we had something called the Friday Club where the women used to get together and talk about issues, and top male executives came along and spoke. Having had children, I now realize there are special women's issues.

CW: What are they?

ROBERTS: When I started out, there was a clear choice in choosing a woman and choosing a man. Employers could make gender-based hires. Now, we can't run our businesses without women. □

Migration migraines pain merger

CONTINUED FROM PAGE 67

And CUC has been a pioneer in electronic commerce, experience it can use to help bring HFS into the fold. CUC later this month will launch NetMarket, a conglomeration of its World Wide Web-based auto, travel and shopping services in a single site.

But CUC could be hard-pressed to unify its data structures with HFS.

CUC, whose data resides across several SAS Institute, Inc. data marts, is upgrading to one repository that runs an Oracle Corp. database on Sun Microsystems, Inc. servers, said Jonathan Beyman, senior vice president and chief information officer at CUC.

If CUC and HFS can merge their data warehouses, HFS will be able to find out how many times a customer has rented from Avis

TRACKING BUYING HABITS

One of CUC's goals in building the unified data warehouse is to be able to do more predictive modeling on customers' purchasing habits.

HFS gives CUC "an opportunity for us to cross-market [products and services] between each other's customers," Beyman said.

Parsippany, N.J.-based HFS is ripe for those kinds of cross-marketing synergies.

HFS, which also owns Days Inn, Century 21 Real Estate, Howard Johnson and other travel and real-estate units, reaches one out of every six hotel guests, one out of five home buyers, and one of every four car-rental customers in the U.S.

Theoretically, HFS should be able to launch a data query on a customer, such as "How much business has HFS done with John Doe in Smalltown, Iowa, over the past five years?" and find that Mr. Doe has stayed at a Ramada Inn three times, rented from Avis five times and contacted Century 21 twice to sell his house.

The problem is, the company's data repositories are "nowhere close to being able to answer a question like that," said Barry Bryant, an analyst at Rodman & Renshaw, a Chicago-based investment bank.

It may require a lot of work to interconnect CUC's data systems with HFS. That is a main reason why Wall Street wasn't excited about the merger announcement.

From an execution standpoint, "they've got a long way to go to cross-sell their database lists," said Rita J. Spitz, an analyst at William Blair & Co. in Chicago.

HFS is building a data warehouse, Beyman said.

But the challenge he and his peers at HFS face is "whether it makes sense to build one aggregated data warehouse or have connecting data fields" among organizations that will remain largely independent, Beyman said. He said he planned to meet with HFS' IS team last week.

NOT IMPOSSIBLE

Merging different databases, hardware and warehousing tools can be a real headache if both companies have incompatible data models and database designs [CW, May 19].

But such a merger isn't impossible.

If both companies kept a data model of what they have implemented along with data definitions and business rules, "then they've got a good chance of being able to merge the data warehouses together," or at least give them a good launch point, said Claudia Imhoff, president and CEO at Intelligent Solutions, Inc., a data management consultancy in Boulder, Colo. □

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A bigger year 2000 disaster? Paul Strassmann believes the millennium software bug will carry a much higher price tag. Page 78

Managing

How good are your staffers' technical skills? Skills assessment software vendors say their products can size them up. But can managers really rely on them? An IS manager tries to answer that question.

CHECKING UP

BY BRIAN JAFFE

EVER FIND YOURSELF thinking, "Does he know what he's doing?"

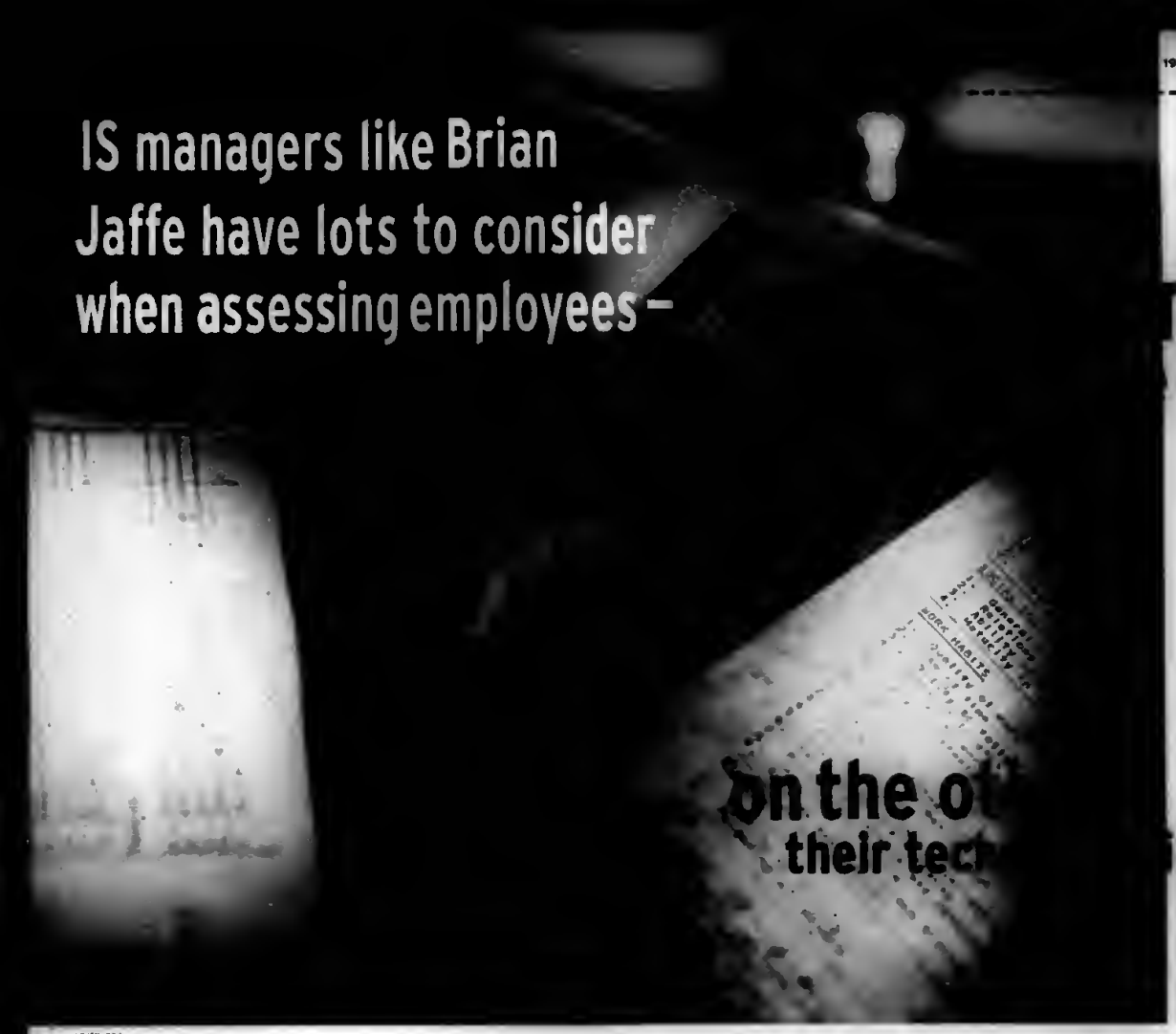
As the manager of a technical department, I often have to consider my staff's technical skills, particularly at review time. I have to ponder the depth and breadth of staffers' expertise, ability to keep up with changes in technology, troubleshooting skills and other factors.

I don't have any tried-and-true ways to evaluate technical skills, but I use a variety of techniques. When I think about the skill set that "Faith" exhibits, I consider what I've seen of her participation in technical discussions: Are her questions entry-level, or do they indicate a solid understanding? Do others seek out her expertise? Or do they roll their eyes if I suggest Faith as a resource?

Of course, these techniques for judging skill levels are strictly subjective. And it doesn't help that my own technical skills have deteriorated as I've moved into management. There was a time when I could detail the difference between baud rate and bits per second. Now, that's just an information technology trivia question.

Aside from performance appraisals, I have to judge technical expertise

IS managers like Brian Jaffe have lots to consider when assessing employees –



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JOHN OLA

when recruiting employees and consultants and when making project assignments. When I mete out those precious training dollars, how do I determine who needs what kind of training? And perhaps more important, I'd like to know if the training was effective. Am I sure that the in-house trainer knows the course material beyond what's in the lesson plan?

Enter skills assessment software. I investigated this product category to see what it was all about, learn how it could be used and discover what value it can offer. Skills assessment is a software category just barely on the horizon. It's tough to tell how much growth there will be, although the opportunity seems tremendous. *(Editor's note: To avoid a conflict of interests, the author didn't review Career Agent, Computerworld's World Wide Web-based skills assessment service, at the editor's request. Career Agent is available at* careeragent.computerworld.com.*)*

Skills assessment software is an electronic test. You're parked in front of a PC, shown questions or situations and asked to select the correct answers. An administrative portion of the software lets the manager determine which questions or topics are the most difficult, see how long students take to respond and record other information related to taking the test.

The packages are generally sold as modules for each subject area. Each module comes with a bank of questions related to that subject. Some packages let you add your own questions or design the entire exam from the ground up.

Most offerings are for testing skills in operating systems and common desktop applications, such as Windows 95, Excel and Word. Two vendors — Platinum Technology, Inc. in Oakbrook Terrace, Ill., and Bookman Consulting, Inc. in New York — offer higher-end categories, including SQL, Visual Basic, Unix, C programming, Oracle and PowerBuilder. Most of the products cost less than $1,000, although some offer options such as annual contracts and per-use fees.

The products I tried were easy to install and easy to run. Some may require a CD-ROM drive and/or a 32-bit operating system. The test-taking is very intuitive. The administrative functions can be more difficult, depending on the complexity of the administrative features offered.

I was most impressed with Bookman's TeckChek. Bookman's entire organization is dedicated to technical skills assessment. Its tests are adaptive, and they recognize that there can be more than one correct answer and that some answers are more wrong than others and should be graded accordingly. For example, when asked to name U.S. states, you'd lose more points for selecting Tokyo than you would for selecting New England.

Although the idea of a skills as-

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QUESTIONS worth QUESTIONING

Just how good are the questions on a skills assessment test?
I took three different tests that gauged Windows 3.1 skills. And though I scored 88%, 89% and 92%, some of the questions and "right answers" definitely raised my eyebrows:

- **Do you consider CONFIG.SYS to be an initialization file used by Windows?** One test did. I don't think I'd agree.
- **One question asked what an ellipsis means in a pull-down menu.** I'll bet more people would get it right if they termed it "dot-dot-dot."
- **The question "Can you select an object using a mouse?"** gave new meaning to the word "novice."
- **My favorite question was the multiple choice that asked about grayed-out options from a pull-down menu.** One of the possible answers suggested that those options aren't as powerful as the options that appear in black.
- **I lost points on a question whose answer was "macro" when I inadvertently typed "marco."**

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CHECKING

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Probably the most delicate issue concerning skills assessment is how it's introduced into the environment and how it's used. If the test isn't presented properly, employees are likely to consider it a prelude to a witch hunt or a downsizing effort. If staffers already have a healthy distrust of management, introducing skills testing isn't likely to make them tingle with a warm and fuzzy feeling.

I'm sure that if I told my staff their skills would be tested, their responses would range from righteous indignation ("I'm good! How dare you question my skills!") to cold sweats ("Wh-what's considered passing?").

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When considering skills assessment software

- **Look for a test with large pools of questions drawn either adaptively or randomly. If the test uses the same 25 or 50 questions repeatedly, don't be surprised if people suddenly become very skilled at having their skills assessed.**
- **Take the exam yourself, or have someone whose skills you value take it. What you and the test consider novice may be two different things.**
- **How does the test account for gray areas where there might be more than one answer?**
- **Is the program forgiving of typos? Does it recognize synonyms (for example, in Windows applications do you Quit, Exit or Close?). Similarly, the program should let you confirm an answer before moving on, so that you can correct an inadvertent mouse click or a typo.**
- **Clearly communicate to your staff how you will use the tests and results. Lots of things can make employees nervous. If you aren't careful, your employees will look at each new exam like a trip to the dentist.**
- **After a while, evaluate how effective the tests are and how effective you are at using them as a tool.**
- **Work with human resources to define a testing policy. It can help you ensure that you're using the tests equitably.**
- **If you plan to use the tests in recruiting, alert the agencies you deal with that testing is your standard operating procedure.**
- **Don't let the tests have a starring role in your decisions. If employees sense that is the case, they'll work harder at pleasing the test than they do at pleasing you, and you'll come off looking like a weak manager.**

—Brian Jaffe

RESOURCES WEB SITES FOR IS MANAGERS

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ECDB Electronic Commerce Database

Whatever your involvement in electronic commerce, you can find links to the information you need at this comprehensive index of related World Wide Web sites. The site lets you link to vendors, consultants, standards organizations, professional associations and other resources for information on subjects that include digital money, smart cards and other virtual payment methods; online transaction infrastructures; security and encryption; electronic data interchange (EDI) and electronic funds transfer.

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computers & society | business & the network | quantum leaps

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Developer.com
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Developer.com

Use this site before you meet with your most cutting-edge project team and you'll know what those folks are talking about. It's actually a resource for hands-on application developers, but it also has something to offer information systems managers who want to familiarize themselves with the latest and greatest in development tools and languages. Maintained by EarthWeb, Inc., a New York-based provider of Java applets and tool sets, the site has acquired a reputation as the voice of the Java community.

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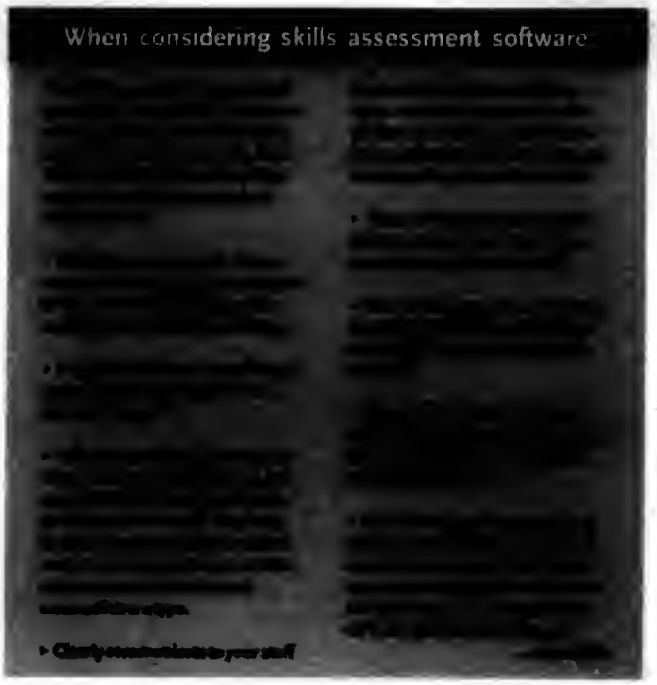

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THE NUMBERS ADD UP TO A BIGGER YEAR 2000 DISASTER

The year 2000 disaster is worse than claimed. The frequently quoted $600 billion estimate for fixing the problem worldwide — far more than the combined costs of three of this decade's natural disasters, the Kobe and Los Angeles earthquakes and Hurricane Andrew — doesn't go far enough. The actual cost will likely be much larger.

The reason for the shortfall: Most estimates leave out work that will have to be done and the cost of doing it. I have examined internal estimates by large corporations and government agencies and reports from the most widely quoted IT advisory services. All woefully misstate the work required to fix the problem and the financial consequences.

MIS-ESTIMATES

Here's where companies and consultancies go wrong in making their year 2000 calculations:

- Underestimating the scope: The year 2000 preparedness exercises concentrate on systems created by the IS organization: financial, accounting, billing and customer-related systems. Yet most public mischief will be caused by failing embedded systems, which are rarely under IS control: global positioning satellites, building security systems, logistics tracking and so forth.
- Neglecting test programs: Is the test software year 2000-compliant? Testing programs can account for as much as 30% of code inventory, and it costs more to validate and upgrade test code than code used in general applications.
- Misusing lines-of-code estimates: The number of lines of code bears no relationship to an application's complexity as measured by "function points." For instance, it may take between 200 and 450 lines of assembly code to define a single function point, whereas Smalltalk may take only 15 to 40 lines to perform the identical task.
- Depending on cost-per-line estimates. These estimates assume that remedial and diagnostic tools are available to fix popular languages such as Cobol and C. Yet these popular compilers account for only 45% of the inventory. The balance consists of 60 languages, including Pascal, PL/1, Ada, Jovial and supplier-specific assembly languages. The cost of fixing year 2000 problems will depend on what tools and expertise you have available.
- Omitting database rectification tasks: Everyone is concentrating on fixing code logic, but ensuring that database records remain usable may take at least as much effort.
- Overlooking litigation expenses: Willful disregard of a known danger can be construed as an act of negligence. When the inevitable epidemic of systeros failures takes place, lawyers and litigants will seize the opportunity to collect big damages and exorbitant legal fees. The lawsuits can rapidly cascade into a series of damage claims, where Company A will sue Company B, which will then sue Company C, which in turn will sue Company A to recover costs.
- Neglecting warranties: The bids given by the firms offering cures for potential year 2000 malfunctions lack warranties and avoid independently verifiable safeguards. Budget estimates based on these price bids are worth little, because they don't cover the eventual litigation should these "cures" fail.
- Misjudging interoperability testing: Everyone is concentrating on testing individual programs and applications at the expense of how they integrate with one another. This is a particular problem with applications that depend on receiving transaction data from other companies.
- Forgetting about consequential costs: In the rush to meet year 2000 deadlines, IS executives will make many imprudent concessions that will cost money in the long term, such as deferring essential maintenance, compromising information security through unmanageable outsourcing and upsetting salary structures by paying ransom rates for year 2000-related positions.

> The reason for the shortfall: Most estimates leave out work that will have to be done and the cost of doing it

WHAT IS THE EXPECTED COST?

Are there any credible sources of year 2000 costs? So far, I have found only one: Capers Jones, the president of Software Productivity Research, a consultancy in Burlington, Mass. He fully discloses the assumptions on which he bases his projections. Following are my conclusions, which are based on his latest report:

1. All year 2000 estimates so far exclude the home-brewed code that has been placed into workstations and local servers by casual programmers. That now accounts for almost 25% of all U.S. function points. With about 40 million function points in this category that may need fixing, and a cost of something like $600 to fix a function point, that adds up to $24 billion in the U.S.

2. The total U.S. inventory of professionally managed code that requires fixing is about 100 million function points. That would consume about 6 million person-months of effort. The cost of identifying, fixing and testing that software by the year 2000 deadline comes to more than $70 billion. Add to that as much as $60 billion for database authentication and repairs, $10 billion for test library development and repairs and $10 billion for post-year 2000 remedial work to correct errors from hastily executed patches.

3. Chalk up another $20 billion for hardware, either to be bought for testing and parallel running of applications or to be upgraded to make poorly repaired applications run faster.

4. Litigation over negligence is the largest unknown expense for the year 2000 disaster. Capers Jones estimates the cost at $100 billion but cautions that the figure could be much larger.

Altogether, this amounts to $294 billion to fix year 2000 problems in the U.S. alone. That's nearly half of the $600 billion worldwide figure. Because the estimated U.S.-based code makes up only 16% of all function points on the planet, it's safe to say that the widely quoted worldwide estimate of $600 billion is low: Fixing the other 84% of the world's function points will cost far more than another $300 billion.

Count on it.

Strassmann (paul@strassmann.com) has just published The Squandered Computer, *which outlines how to remedy executives' disappointment with the trustworthiness of their information managers.*

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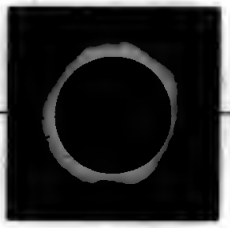

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Leadership

THE 1997 COMPUTERWORLD SMITHSONIAN LEADERSHIP AWARDS

Each year the Computerworld Smithsonian Program honors five leaders whose sustained breadth of vision and pivotal contributions to the industry make them role models for future heroes of the information revolution.

These Information Technology Leadership Awards recognize women and men whose ideas and accomplishments have made a profound contribution to the ecology of knowledge and a positive impact on society.

To the 1997 Leadership Award recipients, congratulations.

Patrick J. McGovern
Chairman of International Data Group

Spencer Crew
Director of the Smithsonian Institution's National Museum of American History

Mike R. Rogers
President & CEO of Computerworld, Inc.

David K. Allison
Chairman, Information Technology and Society, National Museum of American History

THE COMPUTERWORLD SMITHSONIAN AWARDS

June 9, 1997 • Washington, D.C.

Buyer's Guide

When you look past
Lotus SmartSuite 97,

Head-to-head: Office vs. SmartSuite

By Chris DeVoney

THE FIERCE BATTLE AMONG office-suite vendors has trimmed the ranks to three major companies. Yet users have been the winners as vendors have fought for market share by shoveling features, clip art and ancillary programs into their office suites.

We reviewed the professional versions of two of the three major office suites: Lotus Development Corp.'s SmartSuite 97 and Microsoft Corp.'s Office 97 Professional Edition. The third suite, Corel Corp.'s WordPerfect Suite 8 Professional, will be reviewed and compared with the others when it's released this summer.

Given the similar feature sets, we chose to focus on issues that are important to corporations, such as assistance for migrating and deploying the products to thousands of desktops.

The conclusion: If you

Office vs. SmartSuite, page 84

SCORECARD

IN REVIEW ▸ Office suites	Lotus SmartSuite 97	Microsoft Office 97
FEATURE SETS	B	A-
REPLOYMENT	B-	A-
INTRANET/ INTERNET PURLISHING	A-	A-
WORKGROUP COLLARORATION	B	A-
ENTERPRISE COMPUTING	B+	B-
THIRD-PARTY SUPPORT	B-	A
FINAL SCORE	OVERALL B GRADE	OVERALL A- GRADE

Office vs. SmartSuite

CONTINUED FROM PAGE 83

don't care about document portability, Office 97 wins. If you use Notes for collaboration, SmartSuite 97 is king. If you distribute your files to peers in mixed environments, such as a firm with Office 4.2 and Office 95, move to SmartSuite or wait until Microsoft fixes Word 97 next month.

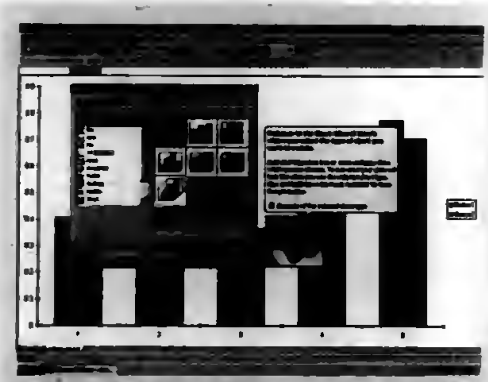
FEATURE SETS

The feature sets of the two suites are nearly identical when you compare individual programs, such as Lotus 1-2-3 with Microsoft Excel. The feature sets of many accessory programs and files, such as the program launchers — SmartCenter for Lotus and the Office Bar for Microsoft — match up well, too.

The suites don't cover all utility areas equally. For example, Lotus' product has ScreenCam, which is useful for capturing and playing back "movies" of screen operations to produce computer-based training materials. Microsoft's suite lacks a screen-movie utility, but Office provides PhotoEditor, which displays and prepares photos for reports and presentations. Lotus doesn't have an image editor.

Each suite is feature-rich, but neither is perfect. The suites still haven't replaced the functionality found in specialized products such as desktop publishing or graphics design packages. For example, you can't specify the point size of a line of type or the spacing between characters in Word or 1-2-3.

Both suites take product training seriously. They cut individual training time and help-desk support needs through tutorials and natural-language help inquiries in which questions are phrased as normal sentences. But Microsoft's on-screen assistants, which can track a user's operations and suggest improvements or solutions, take the automated help one giant step further and reduce the cost of ownership.



Office's assistants track a user's operations and habits and suggest shortcuts to help with difficult operations

Microsoft Office 97 Professional Edition

PRICE: $599 UPGRADE: $309

COMPANY: Microsoft Corp.
One Microsoft Way
Redmond, Wash. 98052-6399
(800) 426-9400
(425) 882-8080
www.microsoft.com

DEPLOYMENT

Rolling out the product means more than just copying files to desktops or servers, although that alone can cost tens of thousands of dollars in labor. Deployment also means customizing the product's setup and operation for individuals or groups.

Both Office and SmartSuite are good software citizens for network installations and provide the requisite package definition files for software distribution systems such as Microsoft's Systems Management Server.

But both have to be tinkered with if you want to split the installation of the suite and place low-usage files, such as clip art, on one server and install the core program on a second server.

Microsoft maintains a useful advantage with its Network Installation Wizard and Office 97 policy templates, which help automate the tinkering. Both the wizard and the templates come in the optional Office 97 Resource Kit, which is available online at *www.microsoft.com* or through Microsoft Press.

INTRANET/INTERNET PUBLISHING

Each suite takes a slightly different approach to the I-words, and each scores well in this category for different reasons. All appropriate suite modules can build and use hyperlinks and uniform resource locators and can "publish" to the World Wide Web with ever-popular frames. And the database products — Access and Approach — can work as low-volume database servers to Web pages.

SmartSuite has native Hypertext Markup Language (HTML) support and direct knowledge of common image formats such as JPEG and graphics interchange format. Hence, the product is more efficient at creating and editing HTML pages without forcing you to "save as HTML." Users also can tap Organizer, the personal information manager, over the Web.

Within Office, the drawing tools put better visual touches on Web tables. Outside Office, Microsoft aggressively offers add-ons, such as its Front Page Web page builder/Web server or its new 60-Minute Intranet Kit.

The only problem is trying to find this add-on, updates and information at Microsoft's cluttered Web site. Even experienced information systems personnel can get lost in the information and support jungle of this megasite.

WORKGROUP COLLABORATION

When a project draws on a variety of places, people and programs, each suite takes a slightly different view. On their own, each appropriate program within Office can track version changes. Team Manager also works as a miniproject manager to manage the tasks and schedule. The Binder creates a common container to hold a project's files that span several programs. SmartSuite, however, is the ultimate companion to Notes, which assumes most of the collaborative burdens. When Notes is deployed, the tracking, versioning and merging of the various documents are easier. If your organization has focused on Notes, SmartSuite is the better office suite.

ENTERPRISE COMPUTING

Both products are good corporate players. Both use electronic mail to send and receive files, can tap a corporate database to report and analyze, and can coordinate schedules.

But Office takes a double hit here. First, if you install Microsoft Exchange and then install Office's E-mail/phone book/calendar application, Outlook, the Exchange settings are lost. Microsoft has posted two solutions on its Web site.

The other is Word's halfhearted attempt to save files it edits in the Word 95 format. Rather than save in the true binary format of Word 6.x/95, Word 97 uses rich-text format but deceivingly uses the normal Word .DOC extension for the file, which is twice the size of a native Word 6.x or 95 file. This quirk means that sharing files in a mixed environment wastes resources and triggers problems.

Microsoft's tentative solution was to use a Word 97 viewer on Office 4.x or Office 95 machines. A better alternative is to wait for the service release, which will be available next month and fixes the problem.

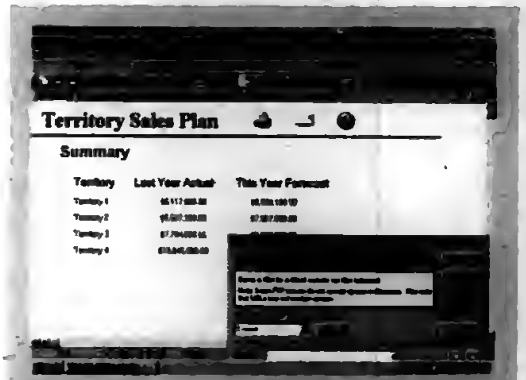
SmartSuite reads and writes Word 4.x/95 files correctly.

THIRD-PARTY SUPPORT

Outside vendors can provide necessary customization, programming, training, support or add-on products that IS departments can't. Both SmartSuite and Office have support from the large support and training companies that must work with IBM and Microsoft.

But when it comes to customization or programming, Office still has an advantage. Its products are driven by Visual Basic Assistant, which has more than 1.5 million developers and users. Office also draws more off-the-shelf products and local support than SmartSuite. □

DeVoney is a Seattle-based writer and reviewer. He can be reached at chrisd@cybercritic.com.



SmartSuite is more adept at publishing to the Internet with features such as saving directly to a file transfer protocol site

Lotus SmartSuite 97

PRICE: $340 UPGRADE: $149

COMPANY: Lotus Development Corp.
55 Cambridge Parkway
Cambridge, Mass. 02142
(800) 343-5414
(617) 577-8500
www.lotus.com

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In Depth

1997 Computerworld Smithsonian Awards

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We agree, and we salute them.

GOVERNMENT AND NONPROFIT ORGANIZATIONS

U.S. Department of Energy Office of Defense Programs' Accelerated Strategic Computing Initiative

Fifty-five years ago, American research centers were racing to explode the world's first atomic weapon.

Today, those same laboratories are racing to avoid detonating nuclear weapons — at least in testing them. Instead, they plan to use high-performance supercomputers to determine how quickly nuclear weapons will deteriorate over time and whether these weapons will still work if needed. The Accelerated Strategic Computing Initiative (ASCI), which will cost $1 billion to $2 billion, must succeed if the U.S. is to reach President Clinton's stated goal of signing the Comprehensive Test Ban Treaty, which would outlaw the tests which, until now, were the only way to ensure all parts of a bomb would work as expected, says Gilbert Weigand, deputy assistant secretary for strategic computing and simulation at the Department of Energy in Washington.

ASCI is racing the aging of America's nuclear weapons, which will reach the end of their 25- to 30-year lifespans in the next decade and must "last forever" rather than be replaced, Weigand says. It is also racing the aging of the scientists who designed those weapons, Weigand adds. The designers "who know the most about our weapons are the people you want validating the code" in the complex three-dimensional simulation applications, he says.

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Weigand says his biggest worry isn't the computer hardware, but getting a good enough understanding of the complex processes within an atomic weapon to build reliable simulation applications. But he says the challenge is stirring. In World War II, "We were racing the Germans to acquire the bomb," he says. Now "we're racing Mother Nature to get a capability so we can keep the bombs forever" — hopefully unused.

— Robert L. Scheier, senior editor, management

MEDICINE

Starbright Foundation's Starbright World

A hospital can be overwhelming and frightening for children. Especially for children recently diagnosed with life-threatening diseases. Doctors poke needles, hook them up to machines, talk quietly with other adults. Children aren't allowed to run, play or shout.

The Starbright Foundation in Los Angeles has set up Starbright World, a private computer network that helps these children meet other children in similar circumstances and have some fun. Starbright World lets children in six hospitals across the U.S. meet in online worlds to play and talk. When they sign on, the children can choose an on-screen avatar to represent themselves and then explore 3-D virtual reality worlds.

The virtual environment eases kids' hospital stays

Meeting other hospital-bound children gives young patients someone their age to talk to and compare experiences with. "It lets these kids make friends and remember that they are kids," says Scott Dierks, Starbright's director of project management. "This helps give a piece of their childhood back."

"It's fun because you can see if other people have the same [disease], so you know you're not the only one who has it," says one recent Starbright World user.

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The technology for the project comes from several sources. Sprint Corp. provides the fiber-optic T3 Asynchronous Transfer Mode backbone for the private network, and Tandem Computers, Inc. donated the LAN servers and switching products. Intel supplies the communicating PCs and videoconferening software, and Worlds, Inc. designed the exotic 3-D worlds.

— Stewart Deck, senior writer, @Computerworld

ENVIRONMENT, ENERGY AND AGRICULTURE

The Peregrine Fund's Harpy Eagle Conservation Program

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But it's IT that prompts Alvarez to venture deep into untracked rain forest in search of the elusive Harpy Eagle, the world's largest bird of prey. Alvarez traps the eagles to attach transmitters, donated by NASA, that provide satellite telemetry data. This data is used with the Global Positioning System and geographic information system software to track the endangered raptors.

Alvarez is the Pan-American coordinator of the Harpy Eagle Conservation Program, sponsored by The Peregrine Fund in Boise, Idaho. For six years, he's been almost a one-man show on a shoestring budget gathering basic research data about the eagles in Venezuela and Panama.

His team, mostly volunteers, works with local residents, government agencies and private companies to demonstrate that such groups can work together to study, monitor and protect Harpy Eagles from extinction and preserve their habitat.

Although individual nests are indeed identified and protected, Alvarez says the main benefit of the program is to provide a model for others to follow. "It's not about saving an eagle here and an eagle there," he says. "It's about getting the message across" that important collaborative work can be done at little cost.

Alvarez says he hopes the project will continue for at least five more years, because so little is known about Harpy Eagles. "If we stop right now," he says, "we don't even know what we're losing."

— David Ramel, copy editor

Smithsonian Awards, page 89

Field manager Rafael Alvarez (no relation to Eduardo) uses the Global Positioning System to track endangered eagles

BOB ADRIAL

In Depth

1997

Computerworld Smithsonian Awards

THE FINALISTS

Business and Related Services

Cisco Systems, Inc. Global Networked Business Model. World's largest electronic-commerce Internet site.

GE Medical Systems. InSite. Remote servicing of medical equipment.

Merck & Co. Procurement Re-engineering Project. Redesigned purchasing program.

Texas Instruments, Inc.'s Innovation Website Team. TI Tomorrow. Intranet.

Texas Instruments' Office of Best Practices. Best Practice Sharing.

The Johns Hopkins Health System and The Johns Hopkins Medicine Center for Information Services. The Johns Hopkins Electronic Patient Record.

United Parcel Service of America, Inc. Networking into the Millennium. Package tracking system.

Education and Academia

Jet Propulsion Laboratory. Kidsat. Shuttle-mounted digital cameras.

Stanford Law School. The Securities Class Action Clearinghouse. Internet dissemination of fraud class actions.

Susan Abdulezer. The Virtual Alphabet Book. Learning CD-ROM for disabled children.

Words+, Inc. Pegasus Lite Augmentative Communication System. Electronic speech output.

Xerox Adaptive Products. The Reading Edge. Reading and speech system for the blind.

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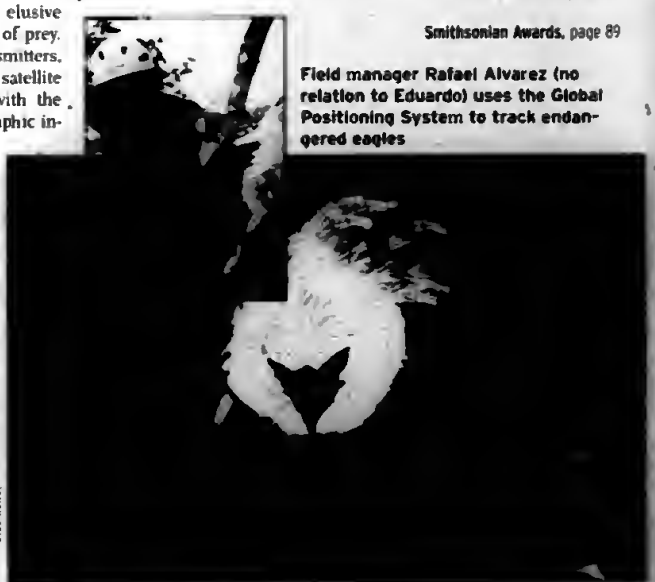
— David Ramel, copy editor

Smithsonian Awards, page 89



Field manager Rafael Alvarez (no relation to Eduardo) uses the Global Positioning System to track endangered eagles

Environment, Energy and Agriculture

British Petroleum Co. Virtual Teamwork. Knowledge sharing.

Cyberlab, Inc. Computerized Robotic Workstation. Robot helps humans avoid radioactivity.

National Center for Atmospheric Research. Climate System Model. Model of Earth's atmosphere to study "greenhouse" emissions.

Niagara Mohawk Power Corp. Nostradamus Forecasting System. Gas-demand forecasting.

Science Applications International Corp. Plasma Hearth Process. Heat treatment for toxic and radioactive waste.

The Peregrine Fund. The Harpy Eagle Conservation Program. Endangered birds monitored via satellite.

Finance, Insurance and Real Estate

Blue Shield of California. Improved Access to Customer Service. Voice-response technology.

CheckFree Corp. CheckFree E-Bill. Electronic billing.

Federal National Mortgage Association. MarketPlus. Home-purchasing network.

First Union National Bank. Remote Banking Service. Home banking.

Flagstar Bank. Lenders' Interactive Video Exchange. Videoconferencing for loan applicants.

Standard Chartered Bank. Document Imaging and Workflow Technology.

Government and Nonprofit Organizations

First Chicago/Mercantile Services LLC Electronic Federal Tax Payment.

Massachusetts Department of Revenue. Telefile & Imaging: Revolutionary Tax Processing Systems.

Office of Defense Programs, U.S. Department of Energy. Accelerated Strategic Computing Initiative. Nuclear weapons simulations.

Plugged In. Plugged In – Bridging the Technological Gap. Internet technology links rich, poor communities.

The Ounce Co. Domestic Violence Documentation System.

Manufacturing

Bay Networks, Inc. Bay Networks Future Applications, Systems & Technology. Rapid system development.

Boeing Commercial Airplane Group. Define and Control Airplane Configuration/Manufacturing Resource Management. Process and system unification.

Bozeman Laboratories, Inc. Knowledge Sharing.

Fruit of the Loom, Inc. Activewear Online. Wholesale Internet sales.

Womax. Womax Online. Wholesale Internet sales.

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22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
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41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

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13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
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OTHER PROFESSIONAL MANAGEMENT
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(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No
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4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
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EDUCATION AND ACADEMIA

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Symbols also can be selected via several alternative access methods, including a stylus, switch and head mouse for nonspeaking users who also have limited mobility.

"These are all patients who have complete, intact cognition that could not otherwise communicate," says Marilyn Buzolich, a speech/language pathologist and director at Augmentative Communication and Technology Services in San Francisco.

Because of its light weight and portability, Pegasus Lite expands users' communication abilities beyond a desktop, enabling them to participate fully in school, work and social activities.

The system also functions as a fully configured PC, "so people can write, fax, send and receive E-mail and balance a checkbook," Buzolich says.

— Julia King, senior editor, IS careers

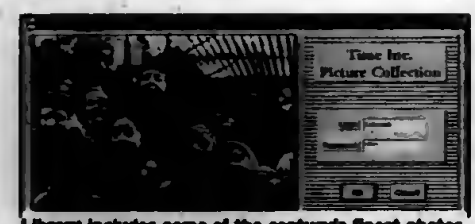
MEDIA, ARTS AND ENTERTAINMENT

Time, Inc.'s Digitized Photo Library

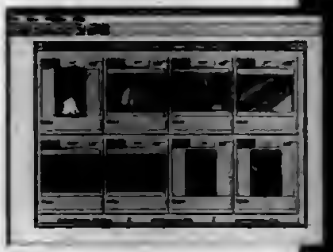
A picture is worth 18M bytes. At least in Time, Inc.'s Picture Collection it is.

Late last year, Time rolled out its client/server-based Picture Collection system for internal use. It's a digital photo library of more than 22 million images from the past 60 years.

And what images they are — the wedding of John F. Kennedy and Jacqueline Bouvier, the raising of the flag at Iwo Jima and Pele the soccer player can be found in this collection. "We have some of the world's greatest images, and we're excited to show them to the public," says Sheldon Chapnik, director of editorial services at Time, Inc.



Library includes some of the century's finest photos



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— Stefanie McCann, senior graphics coordinator

GOVERNMENT AND NONPROFIT ORGANIZATIONS

The Aarell Co.'s Domestic Violence Reporting system

In the time it takes you to wake up to your alarm, eat breakfast, drive to work, put in eight hours or so, drive home, eat dinner, sleep and wake up again, approximately 1,701 Americans will have been attacked by someone who "loves" them, according to figures released in the Department of Justice 1995 Statistics Report. By the time you finish this article, 1.2 such acts of domestic violence will have taken place.

In this domestic war, every bit of help counts, whether it's a hot line, a shelter — or a pen-based application that can expedite crime reporting.

The Aarell Co. in Troy, Mich., is developing such a product: the Domestic Violence Reporting system, or DoVir (pronounced Dover). It's a method of electronic documentation using a pen-based computer and digital camera to assist police officers at the scene of a domestic crime.

An officer questions a victim using a pen-based computer that intelligently prompts to the next question. Once the officer collects crime-scene information, he can use a digital camera to photograph the victim and the offender, if possible.

The camera is then connected to the pen computer, and the just-captured images are merged with the report. The completed report is stored in a central database and is then available for review by attorneys, investigators and human services agencies.

"Battered victims may feel more comfortable with this method because they'll feel that the officers know what they're doing," says Donna Mitchell Austin, associate professor of MIS at Louisiana State University in Shreveport. Austin has done extensive research on computerized interviews.

The immediate benefit to the victim, according to an Aarell spokesman, is that the painful and often humiliating process moves along more quickly without all the paperwork.

Long term, all domestic violence victims will benefit if, as is hoped, the database widens and makes the presentation of court cases easier.

Police officers will benefit from a lighter paperwork load (75% lighter, Aarell estimates) and the ability to feed critical information, including digital photos, directly into a centralized database.

Company officials say they hope that small steps will pave the way for large strides in this shameful war. In the future, Aarell officials say they hope to modify DoVir to collect reports on child abuse, rape cases, sexual offenders and general assaults.

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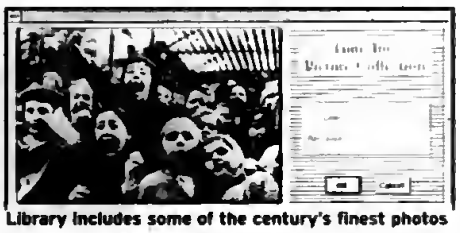

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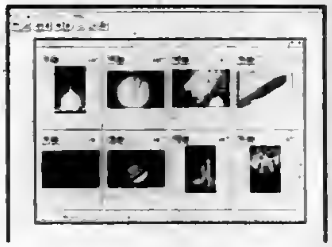

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Starbright Foundation. Starbright World. Virtual community for hospitalized children.

U.S. Environmental Protection Agency. Supercomputer Simulations of the Human Lung.

Science

North Carolina State University. Supercomputer Simulations of Materials.

The Center for Analysis and Prediction of Storms & Pittsburgh Supercomputing Center. Severe Storm Forecasting.

The National Center for Supercomputing Applications. Mosaic. Multimedia network resource.

The Scripps Research Institute and Pittsburgh Supercomputing Center. Simulation of Protein Folding. Study of protein molecules.

The University of California, San Francisco, The National Institute of Environmental Health Science and Pittsburgh Supercomputing Center. DNA Simulation.

Transportation

Companie Vale Do Rio Doce. Railroad and Harbor Control System. Artificial intelligence makes the trains run on time.

Daimler-Benz AG. Driving Simulator. Virtual test bed speeds development.

Federal Express Corp. Air Bill Tracking System.

Hongkong International Terminals Limited for Productivity Plus Program. Kwai Chung New Territories Hong Kong. Optimization of land use.

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SPECIAL REPORT:
IS EDUCATION – CRISIS OR CROSSROADS?

College Enrollments: Rising by LARGE Degrees

By Leslie Goff

Following years of decline, the number of students signing up for IS studies is growing rapidly

AT MIT'S SLOAN SCHOOL OF MANAGEMENT, an employer that regularly attends campus career days and consistently attempts to recruit information systems program graduates from the school hasn't connected with a single student in more than three years.

On the surface, the company's dilemma would seem to confirm recent studies that suggest enrollments in computer science and information technology degree programs are falling faster than you can say Bill Gates. But the truth of the matter is that enrollment in the business school's four IS program tracks has been rising steadily by 10% per year for the past few years.

"I see reports that enrollments are dropping, but our experience here is quite the opposite," says Stuart Madnick, the John Norse Maguire Professor of Information Technology at the Sloan School in Cambridge, Mass. "Recruiters are coming and looking, and they can't find enough people because the demand is huge. And students here have so many offers coming in that they can be extremely discriminating about which opportunities they pursue."

Madnick says the enrollment increase may actually be much higher than 10% per year, given that "IT itself is becoming more pervasive in the overall curriculum."

MIT isn't the only school to defy the notion that students are losing interest in establishing IS careers. Sure, in the early 1990s there was a brief period of declining numbers of IS graduates. But now, at schools as diverse as MIT, Carnegie Mellon University, Harvard University, the University of Minnesota at Minneapolis and the University of Texas, enrollments in computer science and IS degree programs are up significantly. In some cases, they're up as much as 60% in the 1996-97 academic year over the prior year.

As a result, employers such as MCI Communications Corp., AT&T Corp., Price Waterhouse, Federal Express Corp., Marriott International, Inc. and Procter & Gamble Co. are increasingly returning to campus recruiting. Word is spreading among aspiring business school students of 100% placement rates and above-average starting salaries. In the Midwest, new graduates can expect to earn about $35,000 per year.

At the same time, the explosion of the World Wide Web and a trend toward relaxing Cobol class requirements in favor of newer languages is shattering the image of IS as a nerd profession. The result: Students are flocking to IS programs like ducks to water.

"Students who want to do well in business and who are ambitious might consider this career because it seems exciting now, whereas it was not seen that way, even in the early '90s," says Eleanor Jordan, head of the IS faculty in the University of Texas' Management Science and Information Systems department.

REGULAR CYCLE

Universities are still hard-pressed to offer relief for the IS staff supply-and-demand gap. But, anecdotally at least, the so-called crisis in IS education appears to be just a normal swing of the pendulum.

Jerry Batt, the vice president of billing systems at AT&T's Consumer Markets division, who serves on industry steering committees for IS programs at the University of Texas, Texas A&M and Virginia Tech, points out that in the mid-'80s, with the advent of computer-aided software engineering (CASE) tools, career and guidance counselors in high schools and colleges were sounding the death knell for the programming profession.

"CASE tool proponents suggested that it would not be long before you could put system requirements in on the front end, and code would be generated on the back end, and those tools did not deliver on the promise," Batt recalls. "But at the time, the trend suggested there would be no more need for programmers. And now, it's catching up with us that the prognosis was wrong."

CAUSE AND EFFECT

Other factors also affect the pendulum swing. For example, at the University of Texas in Austin, enrollment in the College of Business dropped by half, and the number of IS majors dropped by 20% to 30% after the college established more rigorous acceptance criteria than the rest of the university, Jordan says.

"We already had recruiting pressure — so many companies were coming to campus that we couldn't meet their demands. The changes made the gap even worse," Jordan says. "But the most interesting thing now is that the number of [IS] class registrations for the '96-'97 school year were up 60% overall, and the number of declared majors more than doubled."

Similarly, enrollment in a newly established IS major surged in the Carlson School of Management at the University of Minnesota at Minneapolis this year.

Previously, IS was only an area of emphasis within a general business major, with approximately 20 students signed up.

When the faculty designed a major focused on a client/server-based business process analysis and design-oriented curriculum, 70 students enrolled, compared with an expected 40 to 50, says professor Bob Van Cleave. □

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SPECIAL REPORT:

IS EDUCATION – CRISIS OR CROSSROADS?

Curriculums: Cobol be damned, give them "sexy"

T-SHIRTS SPORTING "NO MORE COBOL" logos have bedecked the halls of Comdex and other trade shows since the dawn of the PC. But last year, when the business schools of two universities dropped the third-generation language from their lists of required information systems degree courses, enrollment in the major swelled.

The University of Texas in Austin, and the University of Minnesota at Minneapolis' Carlson School of Management are part of a growing wave of schools that are moving their curriculums away from the mainframe.

The new focus: classes in client/server-based languages, such as C++. At the University of Texas, enrollment in the IS major more than doubled.

At the University of Minnesota at Minneapolis, where IS was just becoming a major in its own right, nearly twice the number of expected students enrolled in the new program.

The curriculum move made news with students, who were finally able to let go of the notion that a career in IS amounted to a cubicle-bound coding-junkie job. It also caught the attention of desperate campus recruiters whose companies are strapped by year 2000 and European currency conversion projects.

At MCI Communications Corp., for example, 75% of its campus recruits last year were hired for mainframe development and support positions.

"One of the things we struggle with is finding Cobol experience, and we find that schools are getting away from that training and not offering as much as we would like in that area," says Abbie Plessman, an MCI software release manager who during the most recent academic year served as the telecommunications company's information technology college recruiting coordinator.

EXPERIENCE COSTS

Without Cobol-skilled entry-level IS staff, companies such as MCI are increasingly forced to hire veteran mainframers at high salaries or consulting fees and to seek their ranks from the same diminishing pool of talent as every other Cobol-hungry company.

"It was not something recruiters particularly wanted, but students did, and it made the major more attractive to business school students," says Eleanor Jordan, head of the Management Science and Information Systems department faculty at the University of Texas' College of Business. "Now, the major ... is seen as less geeky, more business, and students find the front-end tools that we teach are more exciting."

If they can attract more students to the programs, that itself is good for the IS profession, these schools reason. And if graduates are well-grounded in business systems analysis and design, employers can assume responsibility for Cobol training on an as-needed basis.

The focus on newer technologies is helping attract students, but at the expense of the mainframe.

Both schools devised their new curriculums with input from industry steering committees that wanted to see new IS technologies and problems addressed in course work, but also wanted to maintain older technologies in the core requirements.

"They send mixed signals because they have mixed emotions," says Gordon Davis, professor of MIS at the Carlson School of Management. □

Goff is a freelance writer in New York.

Editor's note: In next week's issue, Goff will conclude this special report with an examination of the impact of IS education trends on recruiting and training. She also will look at the future of the IS job market.

SANDRA E. NOBS

Fame & FUN fortune

Julie Peker typifies the new IS student who wants to contribute, communicate and cash in

Julie Peker, a student in the Carlson School of Management at the University of Minnesota at Minneapolis, has three goals after her fall 1998 graduation: to secure a job that is fun and challenging, to travel and to make lots of money.

Each carried equal weight in her decision last year to change her major from finance to management information science when the school established the discipline as a formal major with its own core curriculum.

"Salary sure helped the decision. We know that in IS today, people are making a good living, and that helped. Also, the ability to travel was really important," says Peker, 23, whose family immigrated to Minneapolis from Chernobyl, Ukraine, in 1989.

The coup de grace was the perception — fostered by Carlson's faculty and an initial business course she took called "Information Decision Sciences" — that a career in IS would sustain her intellectually and socially.

"We learned that we would not be sitting in front of a PC coding 20 hours a day; we could be the person in between the real techies and the businesspeople. We would be the communicators, and I love to talk and communicate, so I thought, 'That's me!'" she explains. "It seemed like the perfect combination, because I would learn to analyze problems from both the business and computer science perspectives, how to put them together and deliver something useful."

This month, Peker will start a paid internship in a 25-person IT development group that supports United Behavioral Services, the outpatient psychological services division of United Healthcare Corp.

"I'll be in a project-oriented environment, working closely with project managers," she says.

— Leslie Goff

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LONE STAR diaries

What's it like looking for IS work in Southern Texas? Some recent hires share their experiences on the trail

By Jill Vitiello

YUP, EVERYTHING'S big in Texas. That includes the opportunities that await information systems job hunters with the right skills. Some Lone Star cities are offering dream markets for IS job seekers and nightmare roundups for IS hiring managers and recruiters who can't fill positions fast enough. Here's a peek at the diaries of three job seekers in three different Texas cities and what they found on the trails to their latest jobs.

AUSTIN: LONE STAR STATE CAPITAL

"Within 30 days of beginning my search, I had five good, career-enhancing job offers," says Rod Kimmel of Austin. "Four were with Fortune 500 companies and offered aggressive compensation packages. I chose Pencom Systems, Inc. because it is different from the pack and because it offered me a chance to grow with the company."

January 1997: After spending two and a half years selling Motorola, Inc. computers to the company's own business units, "the NT and PowerPC technology became unplugged. It was like laying pipe and having the water shut off behind you," Kimmel says.

February 1997: A former client introduced Kimmel to Pencom, and he was invited to attend the company's Total Immersion Hiring Weekend.

March 1997: Kimmel spent an entire weekend at Pencom, along with about 20 other candidates. "I left frothing at the mouth, wanting to work for this company," he says. He was offered a job as a regional business development manager at Pencom Systems Administration.

HOUSTON, WE HAVE A PROBLEM

"If I were a Cobol programmer, I could have walked into any headhunter's office in town and been offered a choice from a hundred positions they are trying to fill," says Ross Leo of Houston. "Since I'm an information systems security expert, my search took a little longer."

November 1996: As an independent IS consultant, Leo says he struggled "to achieve a balance between meeting income requirements" and spending time with his family. He traveled constantly. He began a search for a permanent local job to ease the strain.

December 1996: Leo attended a job-seeking skills course offered by a national career-consulting company. He improved his resume and interviewing skills and gained access to local IS pros.

February 1997: Leo attended a technical job fair, where he met John Berry, the staffing manager at Source Services. Leo gave Berry a copy of his resume.

March 1997: Berry and Leo met to discuss job openings, and Leo landed an interview at St. Luke's Episcopal Hospital.

April 1997: Leo began work at St. Luke's as a senior information protection analyst. "St. Luke's is diligent about protecting patient privacy and information," Leo says.

STARTING OUT IN SAN ANTONIO

"San Antonio is such a great place to live that we put up with pay being a little bit lower than other cities," says Lisa Gates, a recent graduate of the University of Texas at San Antonio and a U.S. Air Force veteran.

November 1996: While completing her senior year, Gates landed a job testing software at Docucon, Inc., which she parlayed into a paid internship.

April 1997: As she approached graduation, Gates posted her resume on the Internet through the university's student employment center.

May 1997: Three weeks before graduation, Clark American, a San Antonio-based financial services company, invited Gates for an interview. Gates accepted a position as a programmer/analyst, garnering a higher salary and better benefits than her previous job. □

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Issue:
October 31, 1997

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October 6, 1997

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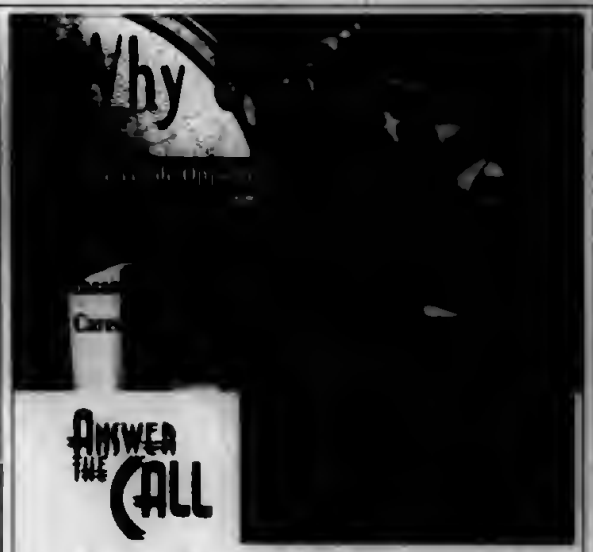

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Senior Technical Advisor to advise a group of systems specialists on Retail Customer Service Company Technology department. Specifically, will review and oversee the design and development of voice technology systems (IBM DirectTALK software, IBM RS6000 equipment, and IBM AIX operating system) within a financial services environment. Design and development includes: C/C++ programming; UNIX performance and capacity measurements and tuning; analysis and performance of diagnostic functions to identify and correct problems; development of DirectTALK components and the deployment of DirectTALK applications; analysis of systems architecture, configuration of AIX operating system including device drivers; and integration with telephone switch equipment (ASPECT hardware). Will liaison with other business units on a business level. Will participate and lead team members in the resolution of technical problems. Will liaison with technology vendors to meet company's strategic needs. Requires Bachelor of Science in Electronics, Electrical Engineering, or Computer Engineering and three (3) years of experience in Job Offered OR three (3) years experience in design and [illegible] (VRU) and voice application units. Candidate must also possess demonstrated expertise in performance analysis, tuning, and problem determination of AIX operating systems; demonstrated expertise debugging and tuning DirectTALK/6000 applications; and demonstrated expertise in analysis, and design of AIX implementation for VRU. Salary: $75,000/yr, M-F, 9:00-5:00. Send two (2) copies of resume to Job Order #97-100, P.O. Box 966, Concord, NH 03302-0966. Applicants must be U.S. workers eligible to accept employment in the United States on a full-time basis.

Electronics Manager to oversee management, r&d and service of energy management systems. Specifically, will oversee development of energy controllers and related products for energy management; oversee manufacture of energy controller, including prototyping, component evaluation, approvals & testing; oversee development of remote programming unit thru direct or remote interfaces (hard wire, optical IR or Radio/Telephone); develop software program (DOS & Windows-based) to allow user to control electrons; load controller. Will oversee in-house customer service and technician training. Requirements Either: 1) B.Sc in EE or CS and 2 yrs experience in Job Offered OR 2 yrs experience managing R&D team in design and development of micro controller based devices for energy control systems OR 2) 5 yrs experience in Job Offered OR 5 yrs experience managing R&D team in design & development or micro controller based devices for energy control systems. Candidate must also possess demonstrated expertise in both hardware- & software- programming micro controllers using C51 ASM 51 and ASM 48; demonstrated expertise using C++ for DOS & Windows based programs for energy control systems; demonstrated expertise in developing radio transmitters for serial data transfer & demonstrated expertise in production management for PCBs. Salary $75,000/yr. M-F 8:00-5:00. Send resumes to: Case# 70363 PO Box 8968, Boston, MA 02114. EOE. Applicants must be U.S. workers eligible to accept employment in the United States on a full-time basis.

SOFTWARE ENGINEER. Researches, designs and develops computer software systems, in conjunction with hardware product development, for industrial applications, applying principles and techniques of computer science, engineering, and mathematical analysis. Master of Science in computer science engineering, or math-related and 2 yrs. exp in job offered or as a systems analyst (or asst.) req'd. Must be able to travel and have proof of authorization to work in U.S., 2 yrs. exp MS DOS 6.2, C; Informix On-Line 5.02, 7.12, ESQL/C, Informix 4GL, Sybase 4.9.2, Impromptu 3.04. $65,000/yr. Interested applicants apply by resume to Georgia Department of Labor, Job Order # GA6108173, 2943 N. Druid Hills Rd., Atlanta, GA 30329-3909 or the nearest Department of Labor Field Service Office.

SOFTWARE ENGINEER. Experience in analysis, design and development of multi-tier client/server software in the area of finance and manufacturing using OOA/D and SSA/D methods and tools. Proven skills in writing interoperable software using C, DEC C++, Visual C++, Windows/Motif, DEC Forms, Oracle, SQL Server, CASE tools across windows, windows/NT, Digital Unix and VMS. Extensive knowledge in using CORBA architecture and semantic messaging. The job duties are: Analysis of current procedures and problems to refine and convert the data to programmable form; determine output requirements; study existing system to evaluate effectiveness; upgrade systems presently in use; develop, test and implement new software; observe functioning of newly implemented systems on programs for trouble areas, correct system/programs as necessary. Requires Bachelors in Science or Computers with three years experience in software development. 40 hours per week at $60,000/- per year. Please send resume to Case # 70447, PO Box # 8968, Boston, MA 02114

Systems Analyst (Atlanta, GA): Design, develop & implement 4th generation relational database applications in Oracle on UNIX platforms. Develop GUI using Visual Basic & Oracle Forms 4.5. Develop programs in C/C++ allowing user to interface with data. Use Erwin Case Tool to analyze & develop data model. Develop, modify Oracle Financial modules. Install, configure servers, hubs & Network devices. Reqs. Bachelor's in Comp. Sci or related area + 2 yrs. exp. in job or 2 yrs. exp. as programmer/analyst. 1 yr. exp. with Oracle, UNIX, Visual Basic, C/C++, Oracle Financials. Sal. $40,893/yr, 40 hrs/wk. Apply in person or by resume to: GA Dept. of Labor, J.O. # GA 6104783, 2943 N. Druid Hills Rd., Atlanta, GA 30329-3909 or the nearest Dept. of Labor Field Service Office.

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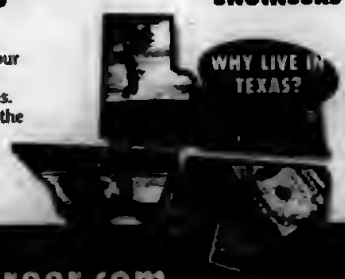

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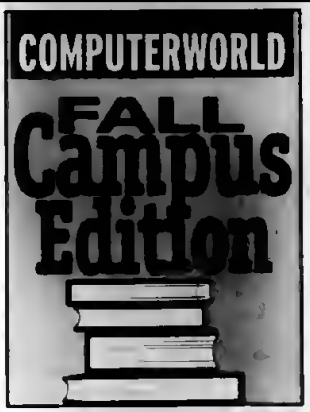

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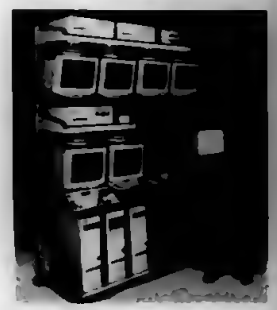

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The Jefferson Parish Council reserves the right to accept or reject any and all proposals.

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STOCK TICKER

The Week in Stocks

Gainers

PERCENT

IPL Systems Inc.	48.6
Quality Objects	38.2
Applix Inc.	18.8
PSINet	18.3
Multicell	17.8
Cayenne Software Inc.	16.4
Datalink Inc.	15.8
Open Market Inc.	14.7

DOLLAR

Northern Telecom Ltd.(N)	3.88
Policy Management Sys.	3.06
Netscape Comm. Corp.	3.00
Cordiant Corp.	2.50
Bell Atlantic Corp.(N)	2.38
Micro Focus(N)	2.38
Banc One Corp.	2.13
Banc of Boston	2.13

Losers

PERCENT

[illegible]	-48.2
[illegible]	-40.0
[illegible]	-33.3
[illegible]	-28.6
[illegible]	-25.0
[illegible]	-23.1
[illegible]	-22.2
[illegible]	-21.4

DOLLAR

[illegible]	-10.25
[illegible]	-4.63
[illegible]	-4.38
[illegible]	-3.88
[illegible]	-4.44
[illegible]	-4.00
[illegible]	-3.88

INDUSTRY ALMANAC

Quantum leaps into high end

Quantum Corp. (NASDAQ: QNTM) is starting to drive a hard bargain in the high-end disk drive market.

The Milpitas, Calif., firm recently posted strong fiscal year-end results based on its desktop-oriented hard drives and tape drives and is poised to make new inroads into the high-end disk drive segment. That market, dominated by Seagate Technology, Inc. (NYSE: SEG), brings much higher margins than the desktop world. International Data Corp. in Framingham, Mass., estimates that Seagate owns 66% of the high-end market, while Quantum has only 9%.

Last week, Quantum unveiled its Atlas III and Viking II disk drives, targeted at high-end systems and PC servers, respectively. The Atlas line includes 18G-byte drives, double the capacity of current 9G-byte drives just hitting the market in new disk arrays from IBM and EMC Corp. (NYSE:EMC).

Stock prices in the entire sector have taken a hit on Seagate's news of expected poor results due to growing competition. Yet even with the prospect of price wars and lower profits, market watchers say that for the long haul, investors can keep storing money in hard drive stocks.

A recent report by Salomon Brothers, Inc. in San Francisco says the storage market will continue to be strong and will grow enough to give Seagate, Quantum and Western Digital Corp. (NYSE: WDC) plenty of room to battle for profits.

To improve margins, Quantum has inked a deal with Matsushita-Kotobuki Electronics Industries Ltd., in which the Japanese firm will help develop new hard disk technology.

"With this agreement, Quantum has effectively removed a significant earnings drain from the income statement and a capital drain from the balance sheet, but has retained access to the technology benefits," says Patrick Tenney, an analyst at Robertson Stephens & Co. in San Francisco, in a recent report.

— Tim Ouellette

QUANTUM FUTURES

Wall Street has great expectations for disk drive maker Quantum:

* = Estimated

Source: Robertson Stephens & Co., San Francisco

Exch	52-Week High	52-Week Low		June 6 2pm	Wk Net Change	Wk Pct Change
COMS	91.38	34.88	3 COM Corp	45.50	2.69	5.6
AIT	68.00	49.63	AMERITECH Corp (N)	59.63	1.13	1.7
ASND	80.25	36.13	Ascend Communications	46.38	-8.63	-10.7
T	43.25	30.75	AT & T	35.13	-0.38	-1.1
BNYN	10.75	1.19	Banyan Systems Inc	1.81	0.00	0.0
BAY	50.63	15.38	Bay Networks Inc	22.00	1.88	7.8
BEL	73.00	55.13	Bell Atlantic Corp (N)	72.75	3.00	4.1
BLS	47.63	35.25	BellSouth Corp	45.38	0.19	0.4
BRKT	42.25	9.75	Brooktrout Technology	14.13	0.50	3.7
CS	46.00	26.38	Conextron Systems	30.63	10.75	31.0
CSCC	91.25	23.50	Cascade Communications	33.00	5.88	15.0
CGRN	77.38	8.63	Centigram Communications	17.88	9.63	5.6
CSCO	73.75	44.75	Cisco Systems Inc	64.38	-2.38	3.7
CMNT	10.13	4.75	Computer Network Tech	5.00	0.19	3.9
XCOM	11.50	4.13	CrossCom	9.88	0.38	3.9
DIGI	33.13	12.63	DSC Communications	24.38	1.25	-4.9
FORE	43.93	16.00	FORE Systems Inc	15.94	-0.69	-4.1
GDC	15.00	6.19	General Datacomm Inds	8.00	0.00	0.0
GSX	46.75	39.13	General Signal Networks	41.63	1.50	3.6
GTE	69.38	37.75	GTE Corp	44.63	1.13	2.6
LU	63.63	40.63	Lucent Tech	62.88	0.75	1.2
MADGF	31.25	4.50	Madge Networks NV	9.63	0.38	5.4
MCIC	39.93	27.38	MCI Communications Corp	38.50	1.00	2.6
NNPI	10.13	2.50	Microcom Inc	10.19	0.00	0.0
NETM	17.38	2.50	NetManage Inc	3.31	-0.19	5.4
NTWK	10.88	1.44	Network Corp	1.75	-0.19	9.7
NCDI	16.25	3.00	Network Computing Devices	11.50	1.25	-9.8
NWR	29.00	11.13	Network Equipment Tech	12.88	0.13	0.7
NETG	30.25	18.88	Network General	14.94	3.09	18.4
NN	43.88	28.25	Nextlevel Networks Corp	39.88	0.38	0.0
NT	87.75	43.00	Northern Telecom Ltd. (N)	87.75	3.88	4.9
NOVL	14.63	7.00	Novell Inc	7.75	0.00	0.0
NYN	55.88	42.00	Nynex Corp (N)	53.38	2.00	3.7
OCTL	31.75	11.50	Octel Communications Corp	21.38	2.38	12.4
ODSI	25.88	9.75	Optical Data Systems Inc	13.50	-0.25	1.6
PCTL	41.25	8.25	Picturetel Corp	12.13	0.13	1.0
PTON	8.00	1.31	Proteon Inc	2.31	-0.31	-11.9
RACO	6.88	3.25	Racotek Inc.	3.75	0.50	15.4
RTK	10.13	1.38	Retix	3.19	-0.19	5.5
SBC	59.00	46.00	SBC Communications (N)	58.88	0.50	0.9
SFA	19.38	10.38	Scientific Atlanta Inc	17.50	-0.00	-2.8
SNVA	47.25	8.25	Shiva Corp	12.25	-0.19	-1.6
PON	49.88	34.50	Sprint Corp (N)	47.88	-0.63	-1.3
SMSC	18.00	8.25	Standard Microsystems Corp	9.00	0.25	2.9
USW	37.25	27.25	U S West Inc	30.38	0.00	0.0
USRX	58.25	40.75	US Robotics	39.38	1.88	-4.7
XIRC	31.13	7.00	Xircom	13.50	-0.63	5.7
XYLN	63.75	12.38	Xylan Corp	19.13	-2.00	12.1
AALR	15.25	6.13	Advanced Logic Research	11.75	0.38	4.6
AAPL	27.75	19.13	Apple Computer Inc	19.63	0.13	-0.7
ASTA	0.39	3.63	AST Research Inc	3.25	0.00	0.0
CPQ	110.38	80.38	Compaq Computer Corp (N)	101.63	3.63	3.6
DELL	115.75	20.25	Dell Computer Corp	110.63	-0.88	-6.2
CTW	75.38	27.75	Gateway 2000 Inc (N)	63.75	3.50	5.5
HWP	80.00	37.75	Hewlett Packard Co	63.50	1.13	2.2
MUEI	25.38	8.13	Micron International Inc	19.00	1.25	6.6
NIPNY	71.81	49.00	NEC America (N)	71.63	2.13	3.1
SGI	39.19	12.63	Silicon Graphics	17.13	1.13	-6.2
SUNW	35.13	22.00	Sun Microsystems Inc	35.81	0.94	2.9
AMH	14.00	8.13	Ambassa Corp	9.94	0.50	5.3
DGN	24.50	9.00	Data General Corp	23.00	2.25	10.8
DEC	51.39	35.00	Digital Equipment Corp	34.00	1.00	-2.8
IBM	91.88	68.63	IBM	85.25	2.50	-2.8
MDCO	18.19	2.88	Meridian Data Inc	4.13	-0.00	1.5
NETF	5.00	1.00	NetFrame	1.10	0.15	11.8
SQNT	20.13	10.38	Sequent Computer Sys.	19.13	2.50	14.2
TEXM	3.00	1.00	Sequoia Systems Inc	3.00	0.19	5.7
SRA	48.25	16.63	Shrafus Computer Inc (M)	47.00	1.38	3.0
TDM	13.13	8.63	Tandem Computers Inc	14.38	0.12	0.9
UIS	8.25	5.38	Unisys Corp	6.81	-0.00	-0.9
ADBE	49.00	28.50	Adobe Systems Inc	43.00	2.50	5.5
AMSWA	8.00	3.75	American Software Inc	8.00	0.75	10.3
APLX	80.00	3.13	Applix Inc	5.13	0.81	18.8
ARSW	38.00	17.00	Arbor Software	28.75	1.25	-4.2
ADSK	69.00	18.50	Autodesk Inc	38.50	-0.25	-0.6
BGSS	32.25	19.00	BG2 Systems Inc	30.00	-0.75	-2.4
BMCS	50.13	25.50	BMC Software Inc (N)	52.50	1.69	-3.0
BOOL	37.00	14.00	Boole and Babbage	25.00	2.63	33.9
BORL	15.25	4.75	Borland Int'l, Inc.	7.00	-0.13	1.7
BOBJY	46.25	7.25	Business Objects	10.00	1.75	19.2
CAYN	9.25	5.00	Cayenne Software Inc	6.00	0.50	10.4
CNTR	6.75	1.13	Centrum Software	1.50	0.00	0.0
COGNF	69.50	18.25	Cognos Inc	31.25	-0.25	-0.8
CA	97.88	37.25	Computer Associates	54.25	-0.25	-0.5
CVN	11.50	3.13	Computervision Corp	2.25	0.38	7.9
CPWR	49.25	16.13	Computware Corp (M)	47.13	1.50	3.3
CSPE	32.00	10.75	Consumers Inc	12.50	1.00	7.4
COSFF	12.00	8.88	Corel Corp	6.18	0.25	4.2
DWTI	7.00	2.88	Datawave Technologies Inc	2.81	0.31	8.9
FILE	49.25	8.50	Filenet Corp	10.00	-0.50	-3.0
FRTE	62.75	7.25	Fourth Software	12.46	-0.81	-6.1
FTPS	11.88	4.31	FTP Software Inc	5.00	0.00	1.1
NUMCF	41.00	22.00	Numerical Comm Ltd	28.50	0.00	2.8
MYSW	28.38	10.23	Nynexpsm Software Corp	18.75	0.20	2.7
IRIC	16.00	11.00	Information Resources	14.63	0.00	0.0
IFMX	51.13	6.88	Informix Corp	9.69	0.50	0.2
INGR	18.88	6.25	Intergraph Corp	7.00	0.00	0.0
LEAF	8.25	0.81	Interleaf Inc	1.20	0.06	4.2
ISLI	12.38	4.22	Intersolv Inc	0.31	-0.81	-8.0
INTU	50.75	20.88	Intuit Inc	20.50	0.50	-2.3
TLC	27.75	3.00	Learning Co. (The)	3.00	1.00	14.3
LGWK	15.63	4.13	Logic Works	6.75	-0.38	5.3
MAPS	17.00	7.00	Mapinfo Corp	11.00	-0.25	-2.2
MATH	8.00	2.19	MathSoft	3.31	0.00	17.8
MCAF	70.00	24.13	McAfee Associates	61.81	-4.44	-6.7
MENT	18.50	8.50	Mentor Graphics	7.63	0.13	1.7
MFGY	28.00	0.75	Mfgy Focus (M)	10.00	1.00	11.1
MCRI	18.13	4.00	Microcrafe Inc	7.13	0.13	1.8
MSFT	129.00	53.75	Microsoft Corp (N)	122.69	1.50	1.3
ORCL	51.00	63.00	Oracle Corp	47.94	1.69	3.8
PMTC	64.23	34.88	Parametric Technology	43.00	2.00	-4.6
PARQ	12.88	0.88	ParcPlace Systems Inc	1.19	-0.11	10.0
PSFT	30.72	19.32	Peoplesoft	20.50	-0.00	1.7
PTEC	20.38	11.20	Phoenix Technologies	14.00	0.25	1.8
PSQL	13.73	5.56	Platinum Software	10.19	1.00	11.6
PLAT	18.00	0.25	Platinum Technology	14.25	0.13	-0.8
PRGS	23.00	12.13	Progress Software Corp	13.25	0.14	1.1
RNBO	23.00	13.75	Rainbow Technologies Inc	17.25	1.00	9.3
REDB	41.25	8.88	Red Brick Systems Inc	8.13	-0.72	8.1
SAPE	53.50	29.75	Sapient Corp	45.20	0.28	0.6
SCDC	8.69	6.19	SCO Inc	6.56	0.19	4.3
SDTI	54.50	21.00	Security Dynamics Tech	38.63	0.75	2.1
SOYA	10.75	8.88	State of the Art	11.75	1.00	9.3
SSW	81.00	27.25	Sterling Software Inc	32.13	-0.75	-2.3
SDRC	80.75	19.00	Struct Dynamics Research	24.38	0.00	0.0
SYBS	24.63	12.13	Sybase Inc	13.50	-0.50	-3.1
SYMC	80.00	8.75	Symantec Corp (N)	19.38	0.63	3.5
SNPS	80.50	21.75	SynOpsys	34.75	-2.44	-6.6
SSAN	10.00	5.88	System Software Assoc.	9.00	0.00	0.0
SYSF	36.50	7.00	Systemsoft Corp	11.00	1.00	9.3
TRUV	8.00	1.20	Television Corp	8.00	0.13	9.7
VIEW	17.25	0.88	ViewLogic Systems	15.88	1.00	6.7
VMRK	12.00	5.50	VMark Software Inc	8.19	0.31	4.0
WALK	13.63	9.88	Walker Interactive Systems	14.88	0.00	5.5
WALL	89.00	12.25	Wall Data Inc. (M)	25.25	0.44	1.8
WANG	34.00	15.38	Wang Laboratories Inc	20.75	0.69	3.1
AMZN	30.00	15.75	Amazon.com	19.63	1.88	10.6
AOL	59.25	22.38	America On-Line (N)	56.88	8.25	4.3
BBN	40.88	13.13	BBN Corp.	35.88	0.13	0.4
CSRN	27.75	8.63	Compuserve Corp	10.00	0.38	3.6
EDFY	63.75	0.00	Edify Corp	12.06	-0.81	-6.3
LCOS	22.75	5.75	Lycos Inc	15.06	1.38	-8.0
NETC	35.75	7.00	Netcom On-Line	10.00	0.00	0.0
NSCP	80.50	0.000	Netscape Comm. Corp	32.81	3.81	13.1
OMKT	89.13	0.00	Open Market Inc.	10.75	1.50	50.7
PSIX	17.25	8.50	PSINet	0.00	1.38	18.3
QDEK	14.38	2.00	Quarterdeck Corp	3.00	0.39	14.0
RAPT	30.63	0.88	Raptor Systems	10.75	-0.00	-0.5
SCUR	35.25	6.75	Security Computing Corp...	6.13	-0.38	-5.8
SPYG	40.25	9.00	Spyglass Inc	9.88	0.00	0.3
YHOO	97.00	15.50	Yahoo! Inc.	32.88	-0.88	-1.1
AMD	46.38	16.25	Advanced Micro Devices	38.13	1.50	3.8
ADI	80.25	12.75	Analog Devices Inc	34.00	-1.00	-2.9
CHPS	26.50	7.00	Chips and Technologies	10.88	-0.69	-6.2
CRUS	24.25	6.88	Cirrus Logic	11.63	0.88	-5.1
CY	19.68	0.13	Cypress Semiconductor Corp.	13.00	-0.75	-5.5
CYRX	53.00	11.00	Cyrix	24.13	1.75	-8.8
INTC	149.75	38.13	Intel Corp	145.75	-6.00	-4.0
LSCC	62.63	19.75	Lattice Semiconductor	57.63	-0.63	-1.1
LSI	46.38	17.00	LSI Logic Corp	38.25	3.75	-8.9
MCRL	54.50	12.00	Micrel Semiconductor Inc (M)	49.19	1.06	-2.0
MU	45.25	16.63	Micron Technology	41.00	-1.25	-3.0
MOT	80.75	64.13	Motorola Inc.	66.00	-0.50	-0.8
NSM	32.25	11.00	National Semiconductor	27.75	-1.28	-4.4
TXN	80.38	60.50	Texas Instruments	65.00	3.75	-4.0
VLSI	29.25	10.38	VLSI Technology	22.38	-1.75	-7.3
XLNX	80.50	34.50	Xilinx	60.88	-6.00	7.3
ZLG	38.13	14.88	Zilog Inc	21.38	-1.13	-3.0
ADPT	46.00	17.50	Adaptec Inc.	32.63	-4.50	12.1
APCC	34.00	8.88	American Power Conversion	22.88	-0.78	-3.3
CBEX	7.00	0.97	Cabletron Corp	1.38	0.13	-8.3
CREAF	20.05	3.00	Creative Technology Ltd	13.63	-1.19	10.1
RACE	24.50	4.25	Data Race Inc	14.00	-0.38	-2.6
DTM	12.50	5.25	Diamond Corp.	9.69	-0.38	-3.7
EMC	41.75	19.50	EMC Corp	40.00	3.63	-8.2
EMLX	21.25	10.88	Emulex Corp (M)	18.38	-1.50	-7.5
ESCC	28.88	19.50	Evans and Sutherland	28.88	2.63	10.0
EXBT	20.00	9.00	Exabyte	10.38	0.13	-0.0
ISLF	4.13	1.03	Intelligent Inter. Systems	1.56	-0.13	-7.4
IOM	46.50	12.63	Iomega Corp	38.88	2.25	32.8
IPLS	7.00	0.88	IPL Systems Inc.	1.43	0.69	48.6
KMAG	30.75	17.00	Komag Inc	27.13	-2.00	-6.9
MTSI	29.75	12.00	Micro Touch Systems Inc	24.38	-0.75	-3.0
PEAK	27.00	8.50	Peak Technology Group	17.06	0.00	-0.3
PNCL	10.13	0.97	Pinnacle Micro Inc.	1.00	0.19	14.3
AQM	0.50	2.00	QMS Inc	3.13	0.00	0.0
QNTM	66.00	10.00	Quantum Corp	30.50	0.13	0.0
RDUS	0.88	0.00	Radius Inc	0.31	0.00	0.0
SEG	36.25	18.12	Seagate Technology	38.25	-1.63	-4.1
STK	20.38	10.00	Storage Technology	46.88	-0.05	-0.6
STLC	6.25	0.44	Stratalogic Corp	0.44	0.06	0.0
TEK	59.75	30.88	Tektronix Inc	56.75	-0.00	0.7
WDC	28.63	10.00	Western Digital Corp	28.75	0.00	3.1
XRX	68.50	44.63	Xerox Corp. (N)	67.69	-0.00	-0.6
AMSY	17.13	13.75	American Mgmt. Systems	25.75	0.00	2.8
AMLY	20.75	17.00	Analysis Int'l (M)	25.63	-0.13	-0.3
AUD	49.50	35.63	Audio Data Processing	48.50	0.25	0.0
BDMI	30.75	20.75	BDM International Inc.	27.63	2.00	7.8
CATP	37.00	26.75	Cambridge Tech. Partners	60.13	-0.38	-1.2
CTN	38.00	0.000	Carleton Corp	20.75	1.50	9.7
CDO	20.50	25.00	Comshare Inc.	36.63	0.00	0.0
CPU	30.88	32.25	CrossUSA Inc.	21.00	-1.00	-4.4
CMRZ	80.25	35.00	Computer Horizons (M)	56.00	1.00	1.8
CSC	86.50	37.00	Computer Sciences	78.25	1.50	2.0
TSK	32.38	11.63	Computer Task Group (M)	32.38	1.88	6.1
CDAT	80.63	12.75	Control Data Systems Inc.	10.00	0.75	5.3
EGGS	33.00	8.63	Egghead Discount Software	4.63	0.00	0.0
EDS	60.38	39.75	Electronic Data Systems Corp	37.00	0.50	1.4
INAC	80.63	15.00	Inacom Corp	30.63	1.75	-5.8
INEL	10.88	2.25	Intelligent Electronics	3.00	0.88	14.8
KEA	39.75	16.38	Keane Inc	55.25	0.63	1.1
MICA	80.00	10.50	Micrografx Inc	17.00	-0.50	-2.9
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KEY (H) = New annual high reached in period (L) = New annual low reached in period

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ONLINE BUSINESS

Standards proposed to boost E-commerce

By Mitch Wagner

VENDORS AND USERS are laying out plans for two technology standards designed to automate Internet payment processing for business-to-business buying.

In one effort announced last week, influential users and some key vendors announced the availability of Version 1.0 of the proposed Secure Electronic Transaction (SET) standard for credit-card processing over the Internet.

SET is supported by all the major U.S. credit-card companies — including Visa International, Inc., MasterCard International, Inc. and American Express Co. — and major electronic commerce vendors such as Microsoft Corp., Netscape Communications Corp. and IBM.

Standards help Internet confidence

Products based on preliminary SET versions are available now. Products based on the final version are due in September. User companies, including Wal-Mart Stores, Inc. and Lands' End, Inc., are planning trials of online credit-card processing using SET.

In a separate but potentially complementary effort, Amex, Office Depot, Inc. and Ford Motor Co. were among the sponsors of Version 1.0 of the Open Buying on the Internet (OBI) interface. OBI will be used in systems that let companies order non-mission-critical supplies, such as office equipment, cleaning materials and even temporary workers [CW, Nov. 11].

The standard has lots of political momentum, given its support from large user companies and vendors, such as Microsoft and Oracle Corp.

JUST GETTING STARTED

But no timetable has been given for introducing products based on OBI, and trials are just getting under way.

Users outside the inner circle involved in formulating these standards are somewhat hopeful of their potential for streamlining Internet commerce.

"Standard approaches that people can write to and support can only help confidence and believability for the 'net," said Robert Womack, director of technology at Hale and Dorr, a Boston law firm that uses the Internet to communicate with its clients and other business partners.

OBI was designed to preseot uniform standards for companies that have networks of supply relationships. A company such as Office Depot often has multiple customers who want to have electronic relationships for ordering office supplies.

"What we found in actually implementing Internet connectivity with several of our customers was that, without the standard, everyone was going in their own different directions," said Monica Luechtefeld, vice president of marketing at Office Depot in Delray Beach, Fla. "Our customers were selecting every proprietary product that was emerging. We found it was increasingly expensive and ineffective to provide custom links to our customers." □

COMPUTERWORLD

For these and other related links, point your browser at www.computerworld.com/links/97060gen1links.html

– Visa's SET Standards page www.visa.com/cgi-bin/vee/sf/standard.html?2+0

– MasterCard's SET page www.mastercard.com/set/

Netscape upgrade faces skeptical users

CONTINUED FROM PAGE 1

While Communicator has a loyal cadre of IS managers eager to throw it onto user desktops, other information systems professionals are hanging back. Reluctant users say the browser upgrades in Communicator aren't compelling, the new messaging and groupware functionality is available from other vendors, and many have other more important systems projects under way.

Users also point out that Netscape Communications Corp. is facing a different Internet world today compared with last year, when major Netscape browser releases became standard almost upon delivery.

"We haven't addressed the upgrade yet," said Ron Frey, Internet business manager at Lands' End, Inc. in Dodgeville, Wis. The company uses Netscape's Navigator 3.0.

More pressing than browser evaluations for Lands' End is a redesign of the company's World Wide Web site to make it easier to navigate. Another priority is to deploy new management tools to make the site more easily updated and maintained.

"We want to be browser-neutral," Frey said. "We don't want to just take advantage of the most-advanced browsers."

Richard Warren, vice president of IS at Judd's, Inc., said he didn't anticipate a wave of Communicator adoptions, "because it doesn't represent the same magnitude of change as other round-number releases for Netscape."

Like many companies, Strasburg, Va.-based Judd's is a Microsoft shop that has standardized on the Redmond, Wash., software giant's browsers and servers. Since Microsoft Corp.'s Explorer 3.0 introduction last July, users have praised the browser for its stability and speed. It is also free, but Netscape charges corporations to use its browser.

But Sherman Woo, director of Global Village Labs at US West Communications, Inc. in Denver, disagreed. He said Communicator's upgrades are significant, particularly given the enhanced electronic-mail functionality and improved Java performance.

FEATURES OF NETSCAPE COMMUNICATOR

Dynamic HTML	Lets developers write simple animation on Web pages
Cascading style sheets	Lets developers create multiple pages using a single template to control the look and feel of the pages
Additional features	Enhanced E-mail, groupware and scheduling
Availability	Early this week

"It makes it easy if all these upgrades are in one place on a browser release," Woo said. "We have our own download site on an internal server, and we can effect the upgrade for all of our 30,000 intranet users in a week."

Proponents of the new Netscape offering note that Communicator isn't just a browser. It is Netscape's first fully functional E-mail, discussion group, scheduling and groupware client. Along with a matched server offering, Communicator is part of Netscape's bid to compete with offerings from Microsoft and Lotus Development Corp.

Previous versions of the Netscape browser made drastic changes to the way the Web looks, adding tables and frames to Web pages. But new features on the browser this week were mostly designed to please developers; they leave the look of the Web pretty much the same.

However, Communicator does include tools designed to appeal to IS managers, which will make it quite popular, predicted Harry Fenik, a vice president and analyst at Zona Research, Inc. in Redwood City, Calif.

Those tools let IS managers manage user settings on the browser and automate software installation.

"I think Communicator will be a big deal. It's the first version of the browser that offers the [information technology] department a chance to manage and control the browser environment," Fenik said. □

Jumping the gun

Like a bunch of track and field runners who can't wait for the starter's gun, some users will run to the Netscape Web site and download the new version of the company's Web browser as soon as it is available — without their employers' knowledge or approval.

For most user companies, that is a violation of policy, because they don't plan to support Communicator. Other companies simply want to test it first.

Either way, IS managers are getting ready, installing blocking software to prevent such downloads and preparing for calls to the help desk.

Robert Womack, director of technology at Hale and Dorr, a Boston law firm, said he has an advantage, because his users work on Sun Microsystems, Inc. Unix workstations instead of PCs. Womack's IS department has configured the machines so users can download software, but they can't install it to their desktops. Instead, users have to leave the graphical user interface, fire up a Unix command line and install the browser manually. And if users are smart enough to do that, they are smart enough to stay out of trouble, Womack said.

"If they can do it that way, they can work in my organization any time and help us with the implementation," he said.

Raj Agarwala, a testing project leader at Merrill Lynch & Co. in Princeton, N.J., said he expected his IS department to receive advance copies of the production version of the browser late last week so they can test it before it is available to the Internet rank-and-file. — Mitch Wagner

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COMMENTARY

The Sun also sets

David Coursey

Seems I started a little ruckus last week with an article in my newsletter stating, essentially, that if Sun doesn't wake up it will find itself in Apple's shoes. This doesn't have to happen.

Sun is "recoverable," to quote a corporate troubleshooter who wrote to me. But not if the company doesn't realize what a mess it's in.

Since the piece ran and got picked up by PointCast, I've gotten about 150 pieces of electronic mail — some pro, some con and a fair number from loonies. Many people just don't want to hear what I have to say. But I think it needs to be said, and I hope you'll agree. Here's the short version of my argument:

1. If server-side Java is as open as client-side Java — which is what Sun is supporting — the big systems vendors lose big. Why? If a Java-based server application runs equally well on any platform that supports Java, customers can choose any hardware platform as their application server.

2. If all servers are equal, then Java will force even more commoditization of server hardware. Compaq must be salivating at the thought that people who purchase Sun, HP or IBM RISC boxes today could soon be enticed to choose an Intel box instead. (Is there a new slogan there? "Intel Instead"?)

3. Choosing Intel probably means choosing Windows NT as the underlying operating system. Yes, I know NT doesn't scale well, Microsoft's recent ballyhooing notwithstanding. But that isn't an advantage Unix vendors can mine for very long.

4. Sure, there will still be many reasons for customers to "dance with the one who brung 'em" and stay with their incumbent systems vendors. But it's easy to imagine that the real growth in server sales will shift to the price/performance winner. And that's a game Sun isn't likely to win.

5. It's painfully clear how well Apple did after a margin crunch hit its hardware business. And it's very hard to turn a hardware business into a software company.

6. All this might be OK if JavaSoft became a money machine comparable to the DOS or Windows of old. But it isn't. JavaSoft has no clue as to how it will ever make money.

7. Even that might be acceptable if Sun could write some really hot Java software that everyone just has to buy. But Sun at its roots is a hardware company, and if the best JavaSoft can do is create a virtual machine that everyone says runs at half the speed of Microsoft's, well ...

8. JavaSoft's "good guy" approach is all wrong. Instead of waiting for its partners, JavaSoft should run like hell and define Java as it goes along. This is the only way JavaSoft can possibly keep up with Microsoft.

The reason for this is simple: I keep hearing that Microsoft writes better and more useful code. Sun is still a Unix-geek shop, meaning it can never get as charged up about a market opportunity as Microsoft does every day before lunch.

Sun doesn't have to become the next Apple, but it's certainly headed down that road. Before the Internet and Java booms, Sun was a successful also-ran headed for real problems. None of that has changed. And Java, sadly, could make the situation much worse. My bet is that Sun's managers are too full of themselves to see the danger for what it is and steer around it.

All this is especially sad because Sun is a truly great company. Its people are smart, and the company has carved out a niche and created (with Java) some forward-thinking technology. But isn't that the same thing we said about Apple, Digital and Novell before each suffered a big fall? □

Coursey is a consultant, analyst and editor/publisher of "coursey.com," an online newsletter available at www.coursey.com (you can find the long version of this Sun report there). You can E-mail him at david@coursey.com.

IS's next mission: Eye-popping apps

Frank Hayes

It's time for IS professionals to start looking for new work. That's certainly the way a lot of users feel. What *is* the IS department, anyway, but a bunch of handymen and janitors?

When something breaks, IS patches it. When there's a mess, IS takes out the trash. When you need something new, IS gets it installed — eventually.

But what's the real value of having an IS department? After all, the company just outsourced what the real janitors and carpenters do. Why keep their information technology equivalents on the payroll?

If that sounds like your users, you've got a problem. Because no matter how valuable your work is, those users aren't seeing it. And value they don't perceive does you no good when somebody wants to cut a budget — and users are pointing at you.

All this came to mind last week when I was a judge at the Windows World Open contest at Comdex. Every year, corporate IS shops submit software projects they've built that run on Microsoft Windows. More than a dozen judges pick out the best ones, based on business value and quality of the solutions.

Those judges aren't the usual celebrity mushrooms or industry blowhards. They've got years — some, decades — of in-the-trenches IS experience. Most of them still make their living that way. They know what they like and dislike, and they know what works. (I only got to judge because *Computerworld* is a founding sponsor of the contest and traditionally has a representative. In IS experience, I was way outclassed.)

We saw lots of fine applications, most of which are already generating warm feelings in the hearts of their users.

But the one that got our jaws dropping — and captured first prize in the Core Business Application category — was from Merrill Lynch. This little beauty gives stockbrokers radically improved access to news, research data and lots of other information that brokers need to help customers handle their investments.

It rolled up legacy mainframe systems, proprietary newswire services, the Internet and off-the-shelf PC applications into an easy-to-use, simple-to-understand tabbed-notebook interface. It was slick. It was sweet. And the value was utterly unmistakable — even the most blind, most self-absorbed user couldn't miss it.

In fact, it will take Merrill Lynch more than a year to roll out the new hardware and software to the 35,000 users who will eventually get it. As one judge put it, "If I'm that last guy in the Hoboken office who has to wait a year for this, I'm ready to kill for it."

Now *that's* perceived value.

And that's the kind of "new work" IS shops should be looking for. Work that will make users want to cheer, not cringe, when IS comes around.

But don't kid yourself. That kind of project won't simply drop into your lap. Users won't drop by your office with a blank check and a detailed proposal for their dream application — especially if they haven't got a very high opinion of your IS shop today.

You'll have to reach out to users. Talk to them. Watch them work. Ask them what they need. Then design something so good, they'll beg you to rip out the old system and put in the new one. Build your prototype, crank up your best sales pitch and sell that project for all you're worth.

Users probably won't buy it the first time. But keep watching, asking, designing and pitching. Eventually, you may just offer them their dream application after all. And even if you don't, you'll learn a lot about your users — and they'll learn a lot about the value you can provide. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

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Dispatches & images from the fringes of the electronic frontier

Patent watch

Recently issued U.S. patents (number, inventor/assignee, date)

Handheld pen computer that can recognize mathematical equations written on the screen. The digital processor parses the pen strokes to recognize an equation, solves the mathematical problem and displays the answer. (5,627,914, Apple Computer, May 6)

An "electronic music system with which a nonmusician can produce melodic, creative music without knowledge of music theory or the ability to play an instrument or keep time." The computer system has background music tracks and rhythm tracks. It prompts the user when solo notes should be played. Moving a joystick tells it to sustain a note or to play a particular riff or chord. (5,627,335, Harmonix Music Systems, Cambridge, Mass., May 6)

Small video display unit, which can be mounted on a shopping cart, that lists the merchandise in each aisle of a store. The unit guides the shopper to selected items and can display marketing messages as the shopper passes by the merchandise. (5,630,068, Leo Vela, Thurman Sasser and Roger L. Martin, May 13)

Source: MicroPatent (www.micropat.com)

DIGITAL HARD HAT

Construction engineers can collect video, sound and data from the project site, using a prototype "digital hard hat" developed by researchers at the University of Illinois at Urbana-Champaign. The setup includes a camcorder, microphone and computer notepad.

More Big Brotherware

Unlike the usual censorware, which blocks naughty Internet sites, this package helps firms write policies that govern employee use of computers. Com.Policy from SilverStone Software in Pittsburgh (www.silverstone.net) also tracks all computer activity and makes screen captures at random intervals to show exactly what a user saw. The screen shots are compressed and stored as a series of thumbnail or full-scale images. The company also has a home version for monitoring the family PC.

AFTERLIVES

1990

Vice president and director of corporate information systems, Eastman Kodak Co., Rochester, N.Y.

Katherina Hudson

Hudson, then 43, was touted as one of the most influential CIOs after signing $250 million in outsourcing contracts for Kodak's mainframe, PC and networking operations. The deal moved 700 IS staffers to contractors, cut $1 billion in asset liabilities and gave a big boost to the IS outsourcing trend. "It's hard to believe that any company gets competitive advantage from the way they run their computer room," she says.

1997

President and CEO, W. H. Brady Co., Milwaukee

Hudson was hired in 1994 to bring an outsider's perspective to quiet W. H. Brady Co., a $360 million manufacturer of signs, labels and tapes. She rode in with her Dodge Ram pickup and Apple PowerBook to reenergize the company and is now pushing a financial-performance metric called "shareholder value enhancement." Hudson, now 50, has won awards for breaking the "glass ceiling" and is the top female executive in Wisconsin

Inside Lines

Get it together, Larry!

When CNN founder Ted Turner took the stage with Oracle's Larry Ellison at Comdex/Spring '97 last week to announce CNN Custom News, it was a clash of cultures. Turner, the older and more ornery Southerner, bellowed when Ellison produced day-old stock prices and baseball scores during a demo: "I don't want yesterday's stocks, I want today's!" Turner later assured the highly amused audience, "You will be able to get all the news you want."

Busy signals, Bosnia style

So you think America Online users have trouble getting through? University TeleInformation Centre (UTIC), Bosnia-Hercegovina's lone Internet service provider, opened for business a year ago and still has a grand total of eight phone lines. "We have more than 800 users at this time," said Haris Hadzialic, a UTIC administrator. "It means we have more than 100 users per one line. It is some kind of Guinness record."

Make sure you've got a key

Included among the R/3 product announcements SAP has cooked up for this week's Sapphire user conference in Amsterdam will be the addition of built-in data warehousing functionality. Sources said SAP has enlisted support from multiple developers of warehousing tools, including data extraction vendor Evolutionary Technologies. Other packaged application vendors are working on integrated warehousing features, but not everyone is impressed. By leaning on one supplier for both transaction processing and decision support, "you've got absolute vendor lock-in," said Doug Lynn, a Meta Group analyst.

It's enough to give you indigestion

Among the interesting items listed in Nets, Inc.'s bankruptcy file are $43,000 in unpaid public relations bills (for helping place stories about the company's success almost up to the day of the Chapter 11 announcement) and four months of bills totaling $6,277.16 from Rebecca's Cafe, an overpriced eatery on Boston's Newbury Street.

Move over, boys

While lots of wicked wit abounded at last week's Third Annual Women in Technology International conference in Santa Clara, Calif., the tongue-in-cheek award for best giveaway has to go to Sun. Women at Sun's booth were giving away free T-shirts that read: "Women in Technology: Get Used to It!" The shirts proved so popular that Sun ran out the first day.

Doing their bit for marital harmony

Handling the bank accounts of wayward husbands proved to be the toughest part of building online security at a major New England bank that wanted to give its customers online access to their money, explained Corporate Technologies' Peter Galvin last week at a Sun Users Group meeting in Boston. Galvin said he had to build special security in to the transaction system so that women checking their accounts online wouldn't be able to easily find accounts their husbands had set up for their, ahem, other significant others. Talk about a firewall.

Celebrity endorsements

Not one to shy away from overstatement, IBM released a recent press statement touting its latest E-mail server release as being "based on the same powerful technology that gained fame as Deep Blue." Sure, the RS/6000 is the core technology of both — a bit like the way flour is at the core of both wedding cake and saltine crackers.

In a display of high-tech hipness, the FCC's Reed Hundt resignation press conference was carried live on the Web via RealAudio. Less hip was the FCC's inability to set up a functioning conference call. "We're not sure exactly what went wrong with that," an FCC spokesperson said. If you know what went wrong with that, or anything else, give news editor Patricia Keefe a call at (508) 820-8183, or E-mail her at patricia_keefe@cw.com.

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Baking Black Ash for another business

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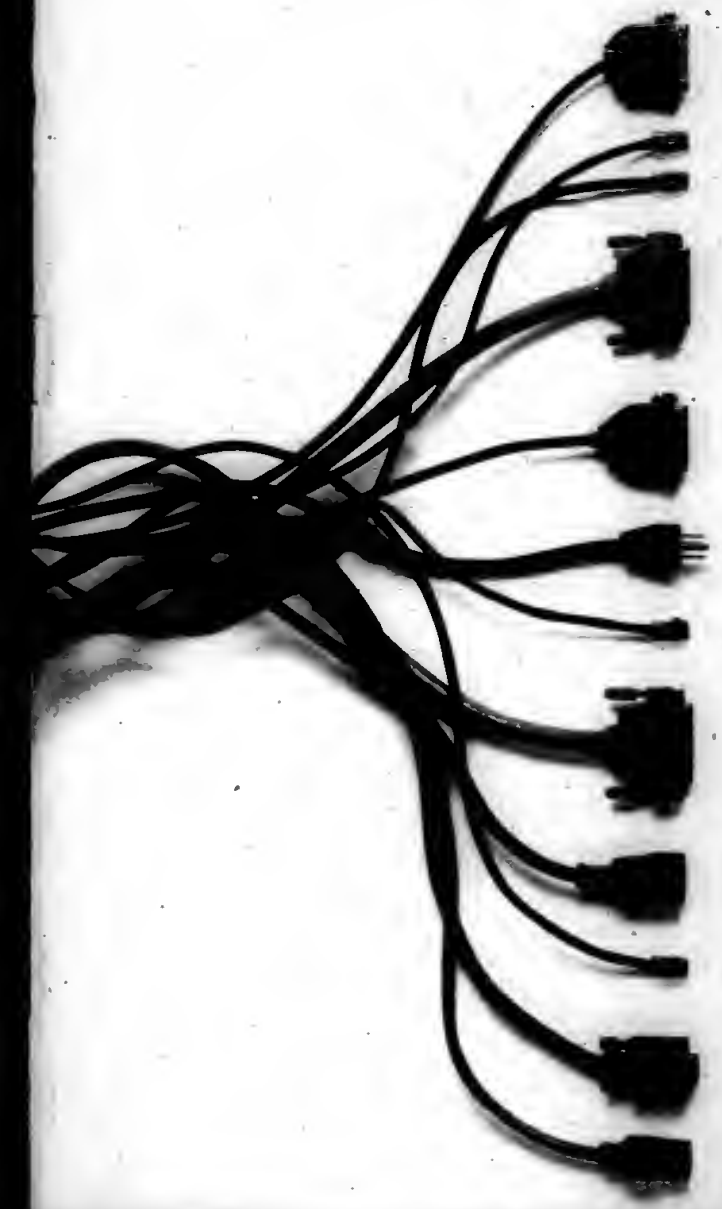

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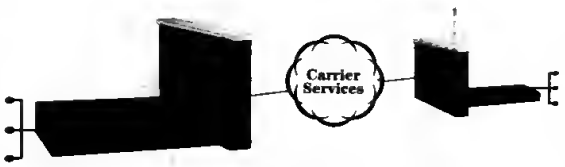

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